

R E P O R T R E S U M E S

ED 015 634

EF 001 239

NEW DIMENSIONS IN JUNIOR COLLEGE PLANNING.

BY- BOYCE, R. DUDLEY AND OTHERS

STANFORD UNIV., CALIF., SCHOOL PLANNING LAB.

PUB DATE DEC 58

EDRS PRICE MF-\$0.50 HC-\$4.80 118P.

DESCRIPTORS- \*FACILITY CASE STUDIES, \*COLLEGE PLANNING, \*COMMUNITY COLLEGES, \*JUNIOR COLLEGES, COOPERATIVE PLANNING, EDUCATIONAL SPECIFICATIONS, SCHOOL COMMUNITY RELATIONSHIP, SCHOOL INDUSTRY RELATIONSHIP.

THIS REPORT CONSISTS OF A SERIES OF DISCUSSIONS BY MANY AUTHORS IN FOUR BROAD DIMENSIONS RELATIVE TO JUNIOR COLLEGES. THE FIRST DIMENSION IS PURPOSES AND DEALS WITH THE UNIQUE ROLE OF THE COMMUNITY JUNIOR COLLEGE, PROVISIONS FOR FACILITIES, PROBLEMS, AND POTENTIALITIES. THE SECOND DIMENSION FOCUSES ON PLANNING AND REPORTS ON STUDIES IN PLANNING DONE IN FLORIDA, SAN MATEO, CALIFORNIA, EVERETT, WASHINGTON AND ANTELOPE VALLEY IN LANCASTER, CALIFORNIA. THE THIRD DIMENSION RELATES TO APPLICATIONS AND DISCUSSES SUCH TOPICS AS THE STUDENT CENTER, ADMINISTRATION AND STUDENT PERSONNEL, FACILITIES FOR TECHNOLOGY, AND INSTRUCTIONAL TRENDS FOR SERVICE AND INDUSTRY. THE FOURTH DIMENSION DISCUSSES COORDINATION OR PLANNING IN THE AREAS OF EDUCATIONAL SPECIFICATIONS, CITIZEN COMMITTEES AND THE ROLE OF THE ARCHITECT. (HH)

# NEEDS IDENTIFICATIONS

ED015634

in

## JUNIOR COLLEGE PLANNING

1958



EF 004239

# in JUNIOR COLLEGE PLANNING

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE  
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE  
PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS  
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION  
POSITION OR POLICY.

EDITED BY

R. DUDLEY BOYCE, SIMON GONZALEZ, & WILLIAM HARWOOD

EDITORIAL ADVISER

RAYMOND C. SCHNEIDER

PRESENTED BY

THE SCHOOL PLANNING LABORATORY

DIRECTOR

JAMES D. MAC CONNELL

SCHOOL OF EDUCATION, STANFORD UNIVERSITY

A SCHOOL PLANNING LABORATORY PUBLICATION

DECEMBER, 1958

STANFORD, CALIFORNIA

## FOREWORD



Changes in the composition of our population and a different concept of the role of the junior college will require the construction of many new institutions of this type in the ensuing years. The forerunners of the "war babies" have begun to enroll in existing colleges. Soon their number will be considerably augmented. The problems of housing, which have been faced by the elementary and high schools, must now be met by the junior college.

A factor increasing the complexity of the problem is that a greater proportion of our youth desires to enter collegiate institutions. The number of applicants has, in part, been increased by the changing role of the junior college. During the past twenty-five years, American junior colleges have emerged from the singular role of preparatory institutions to their present status as community colleges. These new colleges, relatively unfettered by tradition, can adapt more readily to the needs of a particular community, creating a desirable diversity among them.

Planning a junior college to meet the needs of a particular community is a challenge that must be met by educators. Recognizing this problem, the School Planning Laboratory of Stanford University sponsored an institute during the summer of 1958 in which the planning of these institutions was considered. Persons who had successfully met and solved some of the many problems of junior college planning were invited to share their knowledge and experience with other educational leaders. Such topics as the philosophy of the community college, suggestions for securing community support, and discussions of how specific structures might be planned constituted the major considerations of the institute. This publication is an outgrowth of the conference.

It is hoped that New Dimensions In Junior College Planning will assist those who are charged with the responsibility of providing the junior colleges of the future.

James D. MacConnell



## TABLE OF CONTENTS

PART		PAGE
I	NEW DIMENSIONS IN PURPOSE	
	The Unique Role of the Community Junior College	1
	Providing Facilities for Optimum Service	5
	Junior College Education: Problems	10
	Junior College Education: Potentialities	13
II	NEW DIMENSIONS IN PLANNING	
	Florida Prepares For Tomorrow	21
	From Community Conflict to Achievement: A Case Study	32
	Coordinating Function of the Superintendent in Planning	40
	Planning Community Junior Colleges	44
	Space Adequacy Procedure for Creative College Planning	55
III	NEW DIMENSIONS IN APPLICATION	
	Creative Planning: The Student Center	65
	Creative Planning: Administration and Student Personnel	72
	Creative Planning: Fine Arts	76
	Versatile Facilities For Technology	80
	Science: Instructional Trends	86
	Science: Experiences of Industry	88
	Science: Facility Design	90
IV	NEW DIMENSIONS IN COORDINATION	
	Cooperative Planning of Education Specifications	99
	Effective Use of Citizens Committees	103
	The Role of The Architect	106

# NEW DIMENSIONS

in PURPOSE

1



S

# THE UNIQUE ROLE OF THE COMMUNITY JUNIOR COLLEGE

EDMUND J. GLEAZER, JR.

A tremendous demand for higher education is stirring among the people of our country from coast to coast. This is a force that will not be denied. This demand requires re-examination of our traditional structure of higher education with particular emphasis of the unique role to be played by the community junior college, which has made a substantial contribution in extending higher education to the many rather than just a few with the time and money to experience its enriching years.

## A FRAMEWORK FOR HIGHER EDUCATION

A discussion of the function of the community junior college requires consideration of the basic principles which provide the framework for higher education in a democracy. Who will be eligible to receive this education? How will selection be made? What will be taught? Who will control the junior colleges?

A system of higher education should recognize individual differences and social worth of a wide range of interests, capacities, aptitudes, and types of intelligence. In a democracy there is need for schools with courses designed for students with a wide range of abilities, interests, social levels, income levels, races and creeds. Our educational opportunities must be as broad as the span of man's creative and constructive interests.

A system of higher education should give to every individual the opportunity to continue appropriate education up to his point of optimum development. Considerable evidence exists that lack of money is a most important reason why many able young people do not go to college. Accessibility is another significant factor in determining opportunity for higher education.

A further obstacle to many students is that enrollment in an increasing number of colleges is restricted to those high school graduates with above average grades. Should the opportunity for higher education be denied to those individuals who have done average work in high school? Additionally, collegiate entrance requirements are not without their weaknesses in identifying the students who will succeed. Not all young men and women mature mentally at the same time. Opportunities must be provided for the person of somewhat lower academic ability who are driven by a sense social purpose and are highly committed to succeeding in college work.

This demands a kind of college which will provide a wide range of programs to meet the various needs of those students who desire an opportunity to try. Effective counseling is required which will enable these schools to become great distributing agencies preparing some students for university work, others for occupational fields, and in all cases salvaging talent which our society critically needs.

The control of education needs to be close to the people it serves. We do not have a ministry of education handing down a curriculum from a central office for all the colleges of the country. In a manner similar to that of the public schools, the church colleges, state universities, and privately endowed institutions are controlled by boards drawn from the people they serve. Some current writers have expressed concern that the control of the schools and colleges is being removed from the communities they serve. The community which does not provide educational opportunities beyond the high school, oriented to the distinctive needs of the community it serves, will soon find its vigor diminishing and its most promising people drifting away.

#### THE COMPREHENSIVE JUNIOR COLLEGE

Related to these guiding principles and moulded by powerful social and economic forces in the twentieth century, a new kind of educational institution is establishing its identity -- the comprehensive junior college. This institution has emerged from the concept of the community school which has developed in the United States during the past few decades.

An excellent description of the nature of the community junior college has been given by the Board of Regents of the University of the State of New York. After indicating that there are many variations of college organization from which one may choose in seeking to meet educational needs, the Regents make this statement:

"Two-year comprehensive community colleges, characterized by low cost to the student, geographical availability and direct responsiveness to community needs, offering both transfer



and technical-terminal programs, are considered to be the best single means of (a) accommodating future demands for higher education, (b) embracing the increasing heterogeneity of abilities represented in the students graduating from the secondary schools and (c) providing the education necessary for an emerging group of semi-professional occupations. Community colleges have a meaning and competence in their own right. They can provide, as well as technical-terminal education, competent pre-professional education instruction."



Architect's perspective rendering of the Hudson Valley Technical Institute's new campus, Troy, New York

Although local factors cause some important variation among these institutions, certain common distinguishing characteristics of the community junior colleges exist. The following delineate the unique role of this educational institution:

1. The sine qua non of the community college is the orientation of its program to the needs and interests of all the people in the community who can profit by its offerings. Needs of the community must be continuously identified. The college, by attitude and procedures, must be sensitive and responsive to its community setting. Those people affected by the program of the college should participate in its planning.
2. College facilities should be geographically accessible to youth and adults since most of the students will be commuters, living at home.

3. The most prevalent form of organization involves local public control and support, financial assistance from the state, and coordination in the system of higher education through an appropriate state agency.

4. Charges to the student should be relatively small and in many communities the opportunities of the college will be without charge as is the case with other levels of the public schools.

5. In the interest of economy, accessibility, and realism, the educational services of the community college should be carried on in a variety of places such as art galleries, museums, auditoriums, other school buildings, industrial plants, business establishments and television stations.

6. The community college should include education and training for the student who wishes to complete his formal schooling in the community junior college, including semi-professional and vocational-technical curricula. Courses equivalent to lower-division work in senior colleges, leading to satisfactory accomplishment in upper-division studies in liberal arts, education, science and engineering, provide an alternative pursuit for those students who wish to achieve the baccalaureate degree. Both pursuits include programs of general education to prepare students for effective personal and community living. Adult and continuing education provide specialized short courses of many kinds to up-grade employed persons.

7. Students in community colleges represent a wide range of abilities, interests, aptitudes and goals. Although the doors are open to anyone in the community above high school age who can profit by attendance, registration in particular curriculums will likely be selective. The college should serve as an important distributing agency with heavy responsibilities for student personnel services such as testing, counseling, placement and follow-up.

8. The community college should be staffed with men and women whose primary purpose is teaching. The range of abilities, ages and curricula may present perplexing problems in instruction. Expansion of community colleges has been at a rate greater than the increase in qualified teaching personnel. This has made it necessary to employ on a part-time basis, qualified persons from other occupational fields in the community.

9. The college should be a community center responsible for continuing education. More adult students are enrolled on a part-time basis than freshmen and sophomores on full-time.

10. The schedule of activities should be flexible, and adaptable to the work schedules of people employed part or full-time. Very likely the

program will run twelve months each year, from early morning until late at night, and sometimes six days a week.

11. An optimum size shall be determined for the community college which will be in harmony with the purposes of the institution. Very often the initial capacity is not considered the optimum or eventual capacity. The size will vary according to requirements in various communities and other relevant factors.

The community college is an identifiable educational institution with distinct qualities and characteristics which have been described above. The planning stage must be considered next. Planning is based upon an interesting sequence of thought. Out of the values of our society emerge the objectives of our educational institutions. Objectives give birth to purposes, purposes define functions, and architecture serves functions. It is our responsibility to keep the roots of our planning firmly embedded in the fertile soil of a great American idea--the community junior college.

-----

## PROVIDING FACILITIES FOR OPTIMUM SERVICE

LELAND L. MEDSKER

If the junior college is one of the important institutions of our time, certainly the matter of providing facilities which enable it to render optimum service is one of the challenges which must be met.

Any discussion of planning junior colleges, and particularly public junior colleges, may well be based on two assumptions: (1) junior college plants have much in common with those of other segments of local public education, and (2) characteristics of the junior college dictate the need for certain special considerations in plant planning and construction.

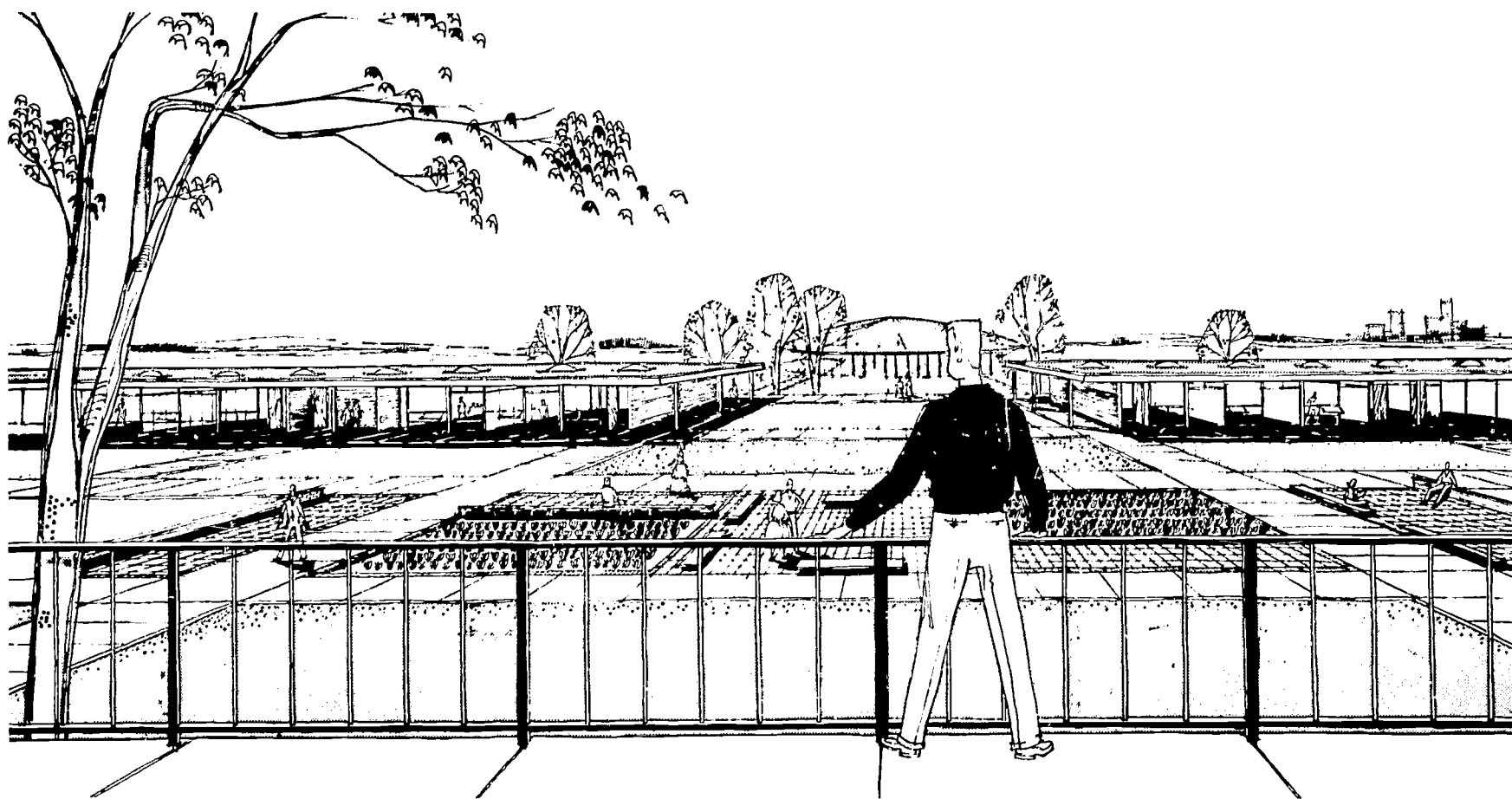
With respect to assumption number one, it may well be said that good planning is essential in any public construction project where the tax dollar is expected to provide the optimum for those who have contributed it. This is especially true in building public school



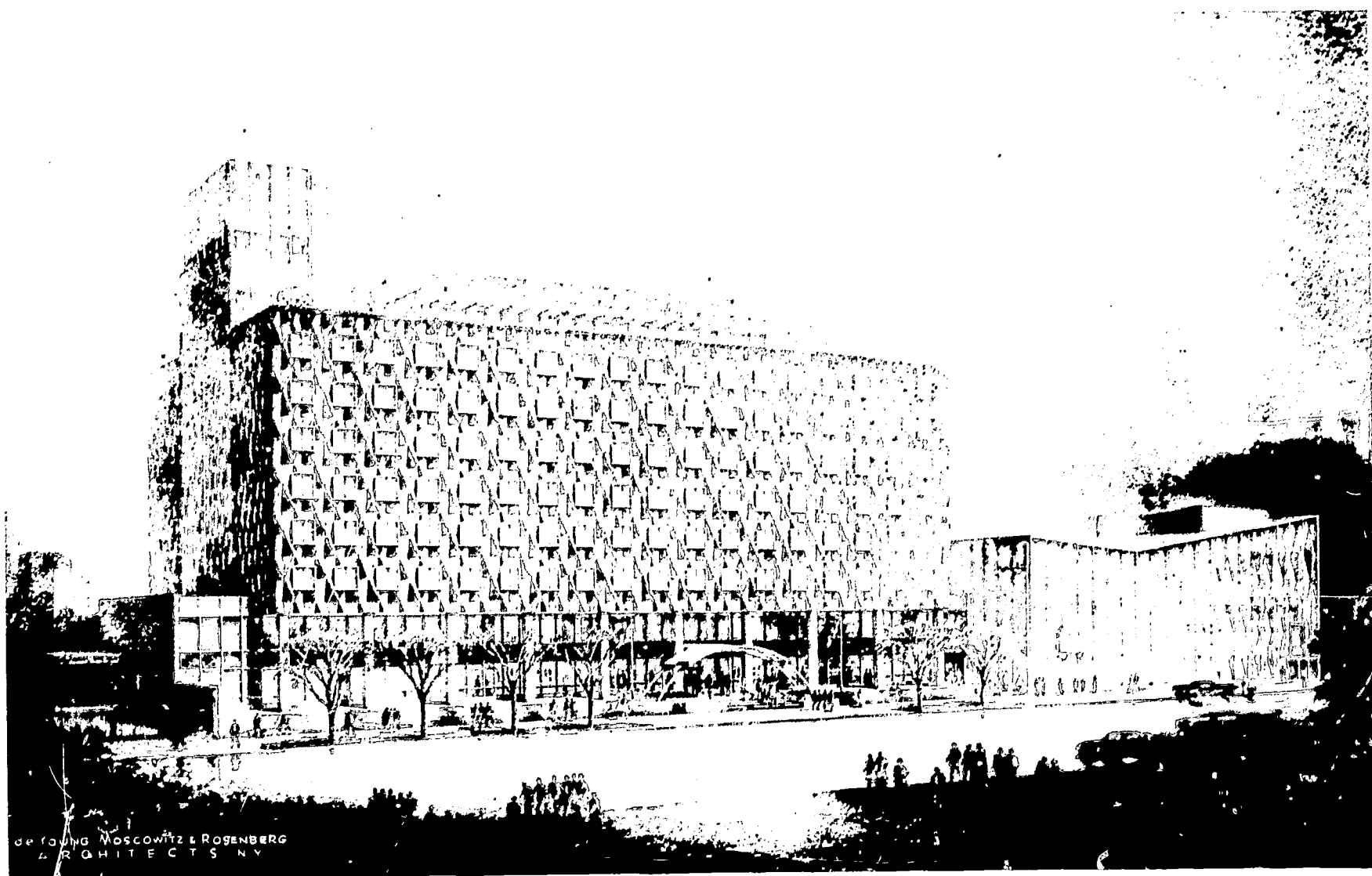
plants which serve a function perhaps more precious in our American way of life than any other public facility. Thus, all the principles pertaining to school house construction that have evolved over a long period of years are as applicable to the junior college as they are to any other school. Such principles as flexibility, expansibility, accessibility and durability also apply to the junior college. Aesthetic considerations, proper lighting and glare control, comfortable and healthful heating and ventilation, economy of construction, functional usage, and site utilization are as indispensable for junior colleges as for other schools.

### PLANNING A UNIQUE INSTITUTION

The nature of the junior college demands special planning of its plant. What are the special characteristics of the junior college which influence its plant needs? It must be sensitive and responsive to the community setting; the people affected by the program should have the opportunity to share in its planning. The facilities must be geographically and financially accessible. The public requires economy in construction, operation and maintenance of plant. Many existing community facilities will be used by the college. The community college is an important distributing agency, with heavy responsibilities for counseling and guidance. There will be a long day and week, as well as a twelve month school year. Eventual optimum capacity must be considered.



Library-Assembly Unit, Administration Building, and Auditorium, Central Christian College, Bartlesville, Oklahoma



Architect's rendering of the Fashion Institute of Technology, New York, New York

What do these characteristics mean in terms of plant planning? Since each point could have many implications, they may be considered in the following five groups:

1. The junior college should be so planned that it can adequately discharge the curricular and student personnel functions assigned to it.

This, of course, goes without saying; yet it needs to be examined in terms of its meaning. As far as curricular functions are concerned, there are several implications of the statement. Since the responsibility of the junior college is to play an increasingly important role in the preparation of students who will transfer to four year colleges, it is highly important that libraries, laboratories, and other instructional facilities be as complete as those used for lower division instruction in the senior colleges. Although preparation for advanced standing depends on many factors, the present emphasis on high academic performance, especially in science and related fields, accents the importance of facilities.



Of all the problems raised concerning the junior college, perhaps none is more serious than the one of adequately serving the non-transfer group. In light of today's rapidly changing technological and scientific society the general consensus is that the junior college should concentrate on the preparation of broadly trained technicians. This necessitates adequate modern facilities, including laboratories and demonstration rooms. Considering recent technological advances, there is question as to whether any school can simulate the shop or laboratory in which its graduates will work as these may undergo radical changes. This poses a grave planning problem for the junior college. It must decide to what extent it will duplicate the tools of technology and to what extent it will rely on community sources in its training program. Whatever the decision, it influences planning for the present plant and that of the future.

Another function to be considered is that of student personnel services. This includes counseling and guidance services, a health program, placement services, student government, student activities, intercollegiate athletics, and other auxiliary services. Since the community college is a commuter's school, there is danger that its students will lose the broadening experiences of campus social interactions possible in a residential college. Therefore, the junior college must provide a social program which brings students together. This function must be considered in planning adequate facilities.

The counseling function must also receive careful attention. This program will take many forms and directions but in any plant it must be well-planned. No longer is a dean's office or a one-counselor office sufficient. The program in most institutions requires many people and much supporting space. The success of a junior college may depend upon the administration of its counseling function.

2. The junior college must be so planned that deep and lasting values will be stressed. Since many junior college students come from lower socio-economic classes, their cultural experience may be limited; additionally, the junior college is the last formal educational experience for most of them. Consequently, the development of sensitivity to the aesthetic should be emphasized through pleasing architecture, beauty of landscape, and permanent art displays. Museum displays in the social and physical sciences not only supplement classroom discussions but also awaken interests in students not enrolled in courses in those fields.

All institutions of higher learning must promote special opportunities for their gifted students. This factor must be considered in planning libraries, laboratories, and other buildings. In spite of the current emphasis on science, facilities must be provided for the fine arts and humanities that are comparable to those of the scientific field.

3. The junior college should be a community center and service agency. If the junior college is to become a community center, its recreational facilities, auditorium, and food service rooms should be used by the public. Although the college plant is not constructed for the primary purpose of serving the public, in this manner its availability for use increases its value to the community.

4. The junior college must be planned as a center for continuing education.

The popularity of the extended day and adult education programs in community colleges is phenomenal. No longer can a junior college plant be considered only in terms of the day program. The extra demands placed on the plant by extensive night use and the special features which are required in the way of lighting, evening food service, and other items must be considered.

Since the community college serves commuters in both the day and evening program, adequate parking, traffic flow, and traffic control are exceedingly important. Unfortunately these needs are seldom projected over a sufficiently long period of time. The main arterials leading to and from the college must be considered in addition to on-campus traffic problems.

5. The community college of the future should be planned in a manner that will afford the best utilization of professional staff.

The number one problem of all colleges in the decade ahead is the procurement, retention, and best utilization of teaching personnel. Variation in size of classrooms, convenient means of using audio-visual equipment, facilities for television, ample work and preparation space, and adequate office facilities are only a few of the items to be considered in planning for good faculty utilization.

So much more could be said about planning. Accessibility, expandability, and flexibility in plant should be particularly stressed. Economy in a time when the tax dollar for educational purposes must go so far is also a matter of concern. Yet stark economy which rules out some of the aesthetic and functional values may not be economy in the long run. The probably year round nature of the program may in some regions have implications for cooling and ventilating the plant. There is hardly an end to what may be considered.

But one thing is certain. Junior college educators must be convinced that good ideas, put into practice, will bring rewards to untold numbers of men and women, old and young, in days to come. This is the challenge!

# **JUNIOR COLLEGE EDUCATION: PROBLEMS**

**A. JOHN BARTKY**

The junior college movement in California is only about fifty years old, which is very young compared with the age of the average college or university. In these few years it has been solidly and successfully built, establishing itself as an integral part of higher education in this state. It has gained public favor primarily because its objectives are good--and it has stuck to these objectives.

The success of the junior college can be attributed to the fact that it is a teaching institution. It has ignored writing and research; it has avoided turning into a selection and marking agency. The average college or university emphasizes selection upon admission and competition for marks and selection all through the student's career. The junior college is interested in salvaging every potential leader for society. It is so superior to the college or university as a teaching institution that many people attend them for this reason only.

## **THE PRESSURES FACED**

The future growth of the junior college is expected to be very great--nearly two hundred per cent in the next fifteen years. Herein lies danger as well as the promise of success. Much of this growth will be due to the fact that colleges and universities will be forced to seriously curtail their enrollments. In local communities already financially pressed by expansion in elementary and secondary education, this growth will stimulate severe pressures whose aim will be to curtail the junior college program. These institutions everywhere will be encouraged to substitute a college transfer curriculum for some vital aspect of their present curriculum.

The pressure for a program to prepare students for transfer to a university will come from sources most difficult to resist, namely the more educated portions of the community, who want their children to receive a typical college education. There is danger that the colleges will succumb to this emphasis, and thereby offer nothing more than the average college provides. If this occurs and present enrollments decline, the junior college will be left with little to fall back upon.

The pressure to cut junior college costs will favor more careful selection of students. As the student body improves in academic ability, larger classes will be possible causing an increase in the pupil-teacher ratios. Buildings will be designed to accommodate large classes. This has already happened elsewhere, particularly in Chicago where classes of two hundred or three hundred students are commonplace. The disadvantage of facilities that can accommodate large classes is that they cannot economically return to the small class pattern. Furthermore, a junior college with large classes loses its teaching effectiveness.

A third pressure will be directed against the general education courses which strive to educate the whole person. Such courses have never been accepted by the academically-minded college professors, yet they have great promise. In the attempt to make all junior college classes of college caliber the emphasis will be returned to subject matter rather than personality development. Much that has been gained in this area by the junior college will be lost. Much that the junior college can boast about will no longer be its concern.

Although vocational education requires the expenditure of large sums of money, this program has made the United States the leading technological nation in the world. Technology is just as important as science in winning wars. In recent years the junior college has done much to give dignity and promise to vocational education. By shifting vocational education to the college level, students have been encouraged to study vocations that are not purely white collar ones. One of the pressures that will result from the increased interest in college transfer curriculum will attack the vocational education program in the junior college. With the loss of vocational education, the junior college will lose one of the primary justifications for its existence.

#### PURPOSES WHICH MAY BE LOST

As the pressure for more and more college transfer education increases, everything that is now held worthwhile in the junior college movement will be in the direction of:

1. Abandoning a college that meets the needs of the community.
2. Ignoring the individual student.



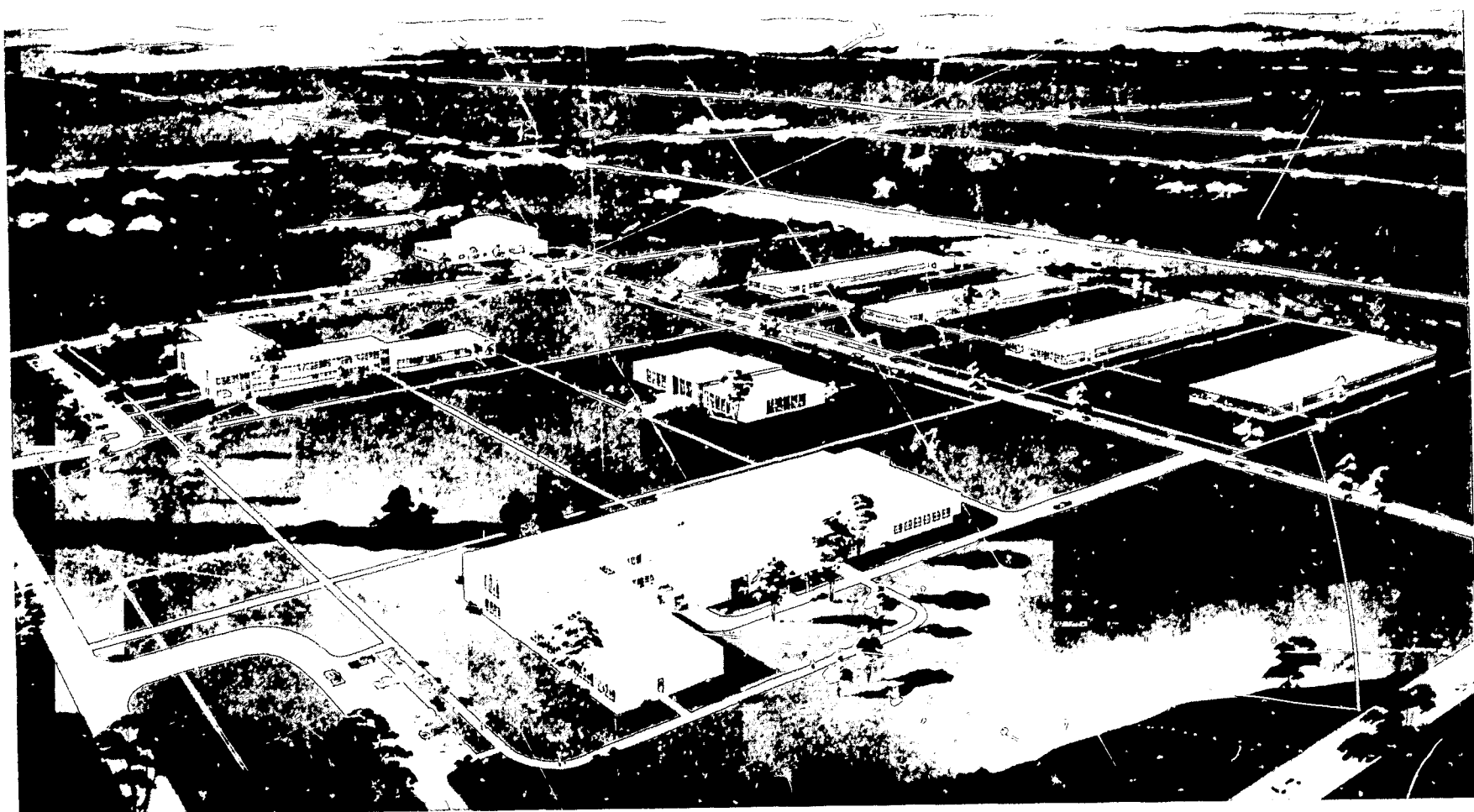
3. Modifying general education in the direction of more subject matter education.
4. Giving up vocational education.

Junior college administrators will be encouraged to employ more research minded teachers to compete with the universities. Junior college buildings will be built to accommodate higher pupil-teacher ratios. They will contain more classrooms and fewer shops. Curricula that broaden the students' personalities will be abandoned. Everything will be directed toward making the junior college a subsidiary of the college and university.

Unless the supporters of the junior college resist these pressures in the coming years, all that will be left will be the miniature shell of a university--and because it has no purpose, this can easily be abandoned.

The coming years promise great prosperity for the junior college. In meeting the challenges of these years its leaders must not ignore the fact that the junior college was designed to meet broad needs, which if ignored will do society serious damage.

-----



Architect's perspective rendering of the new campus of Erie County Technical Institute, Amherst, New York



# JUNIOR COLLEGE EDUCATION: POTENTIALITIES

FRANK B. LINDSAY

Junior colleges lately have become accepted and well identified instrumentalities of American education. In the historical context of the development of the United States, the people of this nation have devised and maintained, in turn, elementary schools, high schools, and in this century, junior colleges in order to assure the integrity, the advancement, and the survival of our government, our society, and our culture. At this time, in every state there are stirrings of intense interest in the exploration of the essential usefulness of junior colleges to meet the urgencies of the present situation at home and abroad. These urgencies may be identified as the explosive increase of our youthful population, the demands of our industrial and military economy, and the unremitting competition of alien ideologies with our American system of human values.

Therefore, it is especially fitting at this time that the unique role of the community junior college receive our earnest attention. A nationwide searching re-examination of the purposes and nature of both secondary and collegiate education is now in progress. The American Institute of Physics, the American Chemical Society, and the American Institute of Biological Sciences are undertaking this analysis. Not to be outdistanced, the corresponding organizations of English, other languages, of mathematics, and of the social sciences are preparing to initiate studies equally revolutionary and far-reaching in ultimate consequences to American education. Both the high school and the college appear destined to be profoundly transformed within the next decade or two. It is no idle pastime for junior colleges to begin to appraise the position they should occupy within this complex and vital enterprise.

Consideration of the outlook for junior college education in California is necessary not only because the state possesses a flourishing array

of junior colleges, but particularly because their faculties, students, and varieties of instructional services constitute a magnificent reservoir for responsible and courageous administrators to employ in intelligent and continuous experimentation. California junior colleges can proceed with full assurance that increasing numbers of young people and mature adults will be enrolling. Junior colleges will fully share in the distribution of students among higher institutions such as the State University and the State Colleges. They stand to benefit greatly from the determination of the American people to obtain more and more post-high school education. The future of junior colleges in California depends upon other factors which administrators and faculties must shortly take into account.

#### A PLATFORM FOR JUNIOR COLLEGE EDUCATION

Accordingly, herein is presented for consideration a brief platform for the junior colleges of California.

The first plank in the platform is to guarantee that all young men and women shall have opportunity for junior college education. The Restudy of the Need for Additional Centers of Public Higher Education in California (California State Department of Education, 1957) made even more explicit the basic role of junior colleges. The Joint Staff of the Liaison Committee of the State Board of Education and The Regents of the University of California in a letter of transmittal of the report specifically urged that "adequate junior college facilities will be provided through local initiative and state assistance prior to the establishment of additional state college or University campuses."

The realization of this goal will in some instances require the survey and establishment of additional junior college districts in areas of sufficient density of high school population to justify expansion of such coverage. In general, it seems that this is proceeding in a conservative, but satisfactory, manner. There are regions of California, however, where the maintenance of strong junior colleges is less possible because of sparsity of high school graduates within a feasible radius. These graduates must be offered equal opportunity by other means--at least until population and assessed wealth accumulate. Existing junior colleges should combine their efforts to inform these students of the opportunity junior college education provides and, by dormitories and in-lieu payments for transportation, house them on existing campuses. If additional statutes are needed, the California Junior College Association should prepare legislative proposals to make this possible. Individual junior colleges should not enter into competition for these students but should jointly distribute them where their vocational interests may be best served. No other undertaking can so quickly weld the junior colleges into a system of solidarity and so genuinely assure the public of their capacity for educational leadership

and service.

A second plank in this platform for junior colleges is that the junior colleges combine to study the proper size such institutions should attain. Too great an enrollment on a single campus defeats the very meaning of the junior college; it invites regimentation of instruction and formality which is utterly inconsistent with sound counseling and teaching. Long ago, high schools learned to divide their students among several schools within the district as the school population increased. This was done to preserve the distinctive character of American secondary education. Junior colleges must attack their problem with equal sincerity. If a case can be made for optimum size, legislative remedies can be found to counteract the argument that the cost of duplication of facilities is too oppressive to be borne by districts. Should the junior colleges persist in a race for gigantic student bodies, a decrease in the quality of instruction will result.

A third platform plank should be the preparation of junior colleges to assume the responsibility of lower division education in the state. To be sure, other higher institutions do not, at the moment, feel altogether easy in their minds about complete relinquishment of their lower divisions. The logic of events favors the assumption of this function by the junior colleges. The way to promote this is for junior colleges, again in concert, to strive for instruction that is not merely satisfactory, but of superior quality. The junior college has the mission of forwarding individualized and competent teaching. Here, faculty members attain recognition through teaching competence; in other colleges the road to professional advancement is through research and publication. The junior college faculties are freed from these impediments and, consequently, may devote their efforts to the improvement of instruction. There should be many opportunities for junior college teachers to exchange positions for brief periods of time with their colleagues in other institutions.

The plank just noted leads immediately to its corollary: the restrictions of credentialing which now prevent junior colleges from availing themselves of the most competent human resources of their communities, in the persons of professional leaders and the foremost practitioners of business and industrial technology, must be eliminated--and with dispatch. It is inexcusable to continue using subterfuge to bring experience and talent into the junior college classrooms; it is an insult to our artists, businessmen and professional men to "bootleg" them into our service.

The junior colleges must become a self-disciplining professional body. Just as the incapable junior college must be denied accreditation until it reforms its practices or unites with neighbors to achieve reliability of instruction, so the indifferent teacher must be supplanted by capable people.

A fifth plank in the platform is that junior colleges should not be limited to curricula of four semesters in length. This is not to aspire to the offerings of upper division studies. If a junior college exists to serve its students, it must be free to produce an employable product. If four semesters cannot achieve this result, a longer time of organized instruction must be formulated. How else may a junior college really serve its community? Junior colleges must devise curricula better suited for student groups not primarily seeking transfer privileges.

#### A GOLDEN OPPORTUNITY

The social pressure which makes the achievement of a bachelor's degree the impelling purpose of many students is evident. On this point, the recent Rockefeller Report, The Pursuit of Excellence, observes:

"We have made receipt of a college degree an accolade of merit not in terms of the intellectual achievements which it should symbolize





Science Building, Orange Coast College, Costa Mesa, California

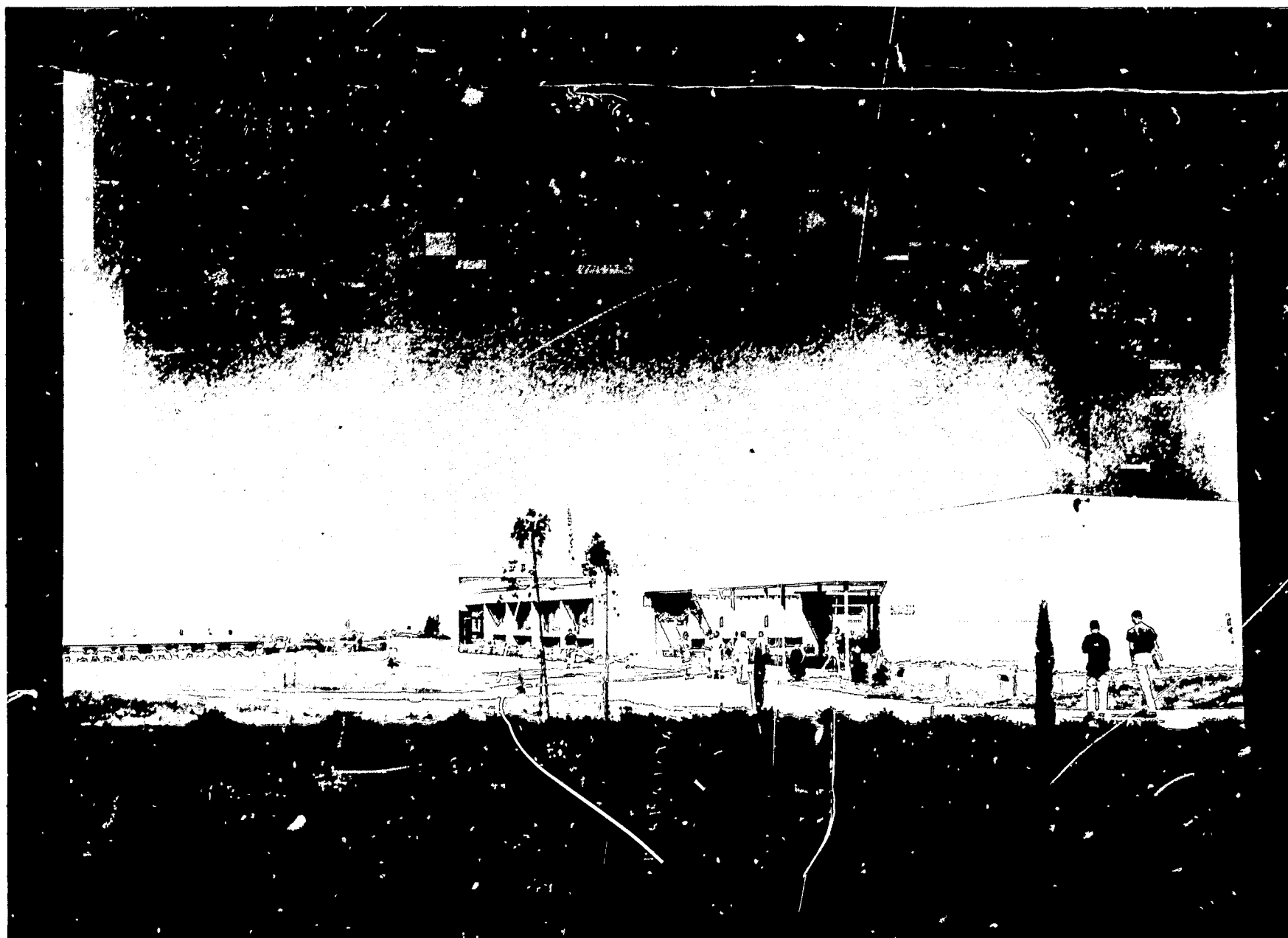
A fifth plank in the platform is that junior colleges should not be limited to curricula of four semesters in length. This is not to aspire to the offerings of upper division studies. If a junior college exists to serve its students, it must be free to produce an employable product. If four semesters cannot achieve this result, a longer time of organized instruction must be formulated. How else may a junior college really serve its community? Junior colleges must devise curricula better suited for student groups not primarily seeking transfer privileges.

#### A GOLDEN OPPORTUNITY

The social pressure which makes the achievement of a bachelor's degree the impelling purpose of many students is evident. On this point, the recent Rockefeller Report, The Pursuit of Excellence, observes:

"We have made receipt of a college degree an accolade of merit not in terms of the intellectual achievements which it should symbolize





Administration-Business Education Building, Bakersfield College, Bakersfield, California

but in terms of the prestige which it attracts. To have received a college degree is becoming an essential qualification for entry into a great many careers, even though that particular career may not utilize any of the particular kind of education which has been received."

Let us recognize that junior colleges have in the past been subject to this situation. The present dissatisfaction of secondary education gives junior colleges a golden opportunity to reform their curriculums. This cannot be wisely effected overnight; California junior colleges should commence a re-study of appropriate training for many careers. This is implicit in the responsibility junior colleges should discharge in assuming an enlarged measure of lower division instruction.

Stirrings among professional bodies, such as the physicists, biologists, and mathematicians direct attention toward anticipated changes in the classroom teacher whether in high school or junior college. The task is to overcome the parochial outlook which the instructor acquires honestly through his concentration upon a specialized field. A junior college instructor must, first of all, know his subject matter

if he is to be a master teacher. In order to communicate his knowledge to students and in order to assist them in achieving insight into the meaning of intellectual exploration, the junior college teacher must do more than specialize. He must be cognizant of interconnection of his subject field with other disciplines.

If developments are not anticipated, campuses may be constructed which are obsolete upon completion. Customarily, classrooms and laboratories have been deliberately constructed to separate students for instruction in compartmentalized studies. Furthermore, the surrounding community was intentionally excluded from the classroom. This worked well when learning was tied to the textbook, to the reading of meters, and the mixing of reagents in test tubes. The pace of advancement in sciences and the social sciences and the employment of their findings in government, business and industry can no longer tolerate such methods of instruction.

If a junior college campus is a center of repose within a setting of lawns and clipped turf, it is built for yesterday, not tomorrow. A junior college should not suggest a meditative leisured stroll but intellect in motion. Its layout should incorporate the same dynamic beauty which modern machines have achieved. Engineers and artists realize that aesthetics are not superfluous ornamentation but the secret for achieving economical production. A junior college classroom should include facilities for television and recording equipment and adequate space for reference materials. In such a setting for learning the instructor will cease to be the oral fountain-head of information and quietly must take his place as a respected member of the group engaged in collective and independent learning.

The success of junior college education in California depends upon the wisdom and enthusiasm which administrators and faculties bring to the promotion of instruction. They must realize that education exists in the context of the community and nation. Its vitality resides in the convictions of teachers and their awareness of the values cherished by the American people.

It could be all too easy to become intoxicated by the spectacle of the increased numbers who will seek enrollment in institutions of higher learning, or disillusioned by the labor of housing them. Unless each student is treated as a worthy individual in his own right, unless activities are designed to contribute to insight and personality development, colleges will be ephemeral institutions which are not discharging their obligations. All who firmly believe in the mission of junior college education should most earnestly examine its instructional performance to determine how well these institutions are serving their student bodies and how clearly they communicate with all segments of the residents in the communities they serve.

-----

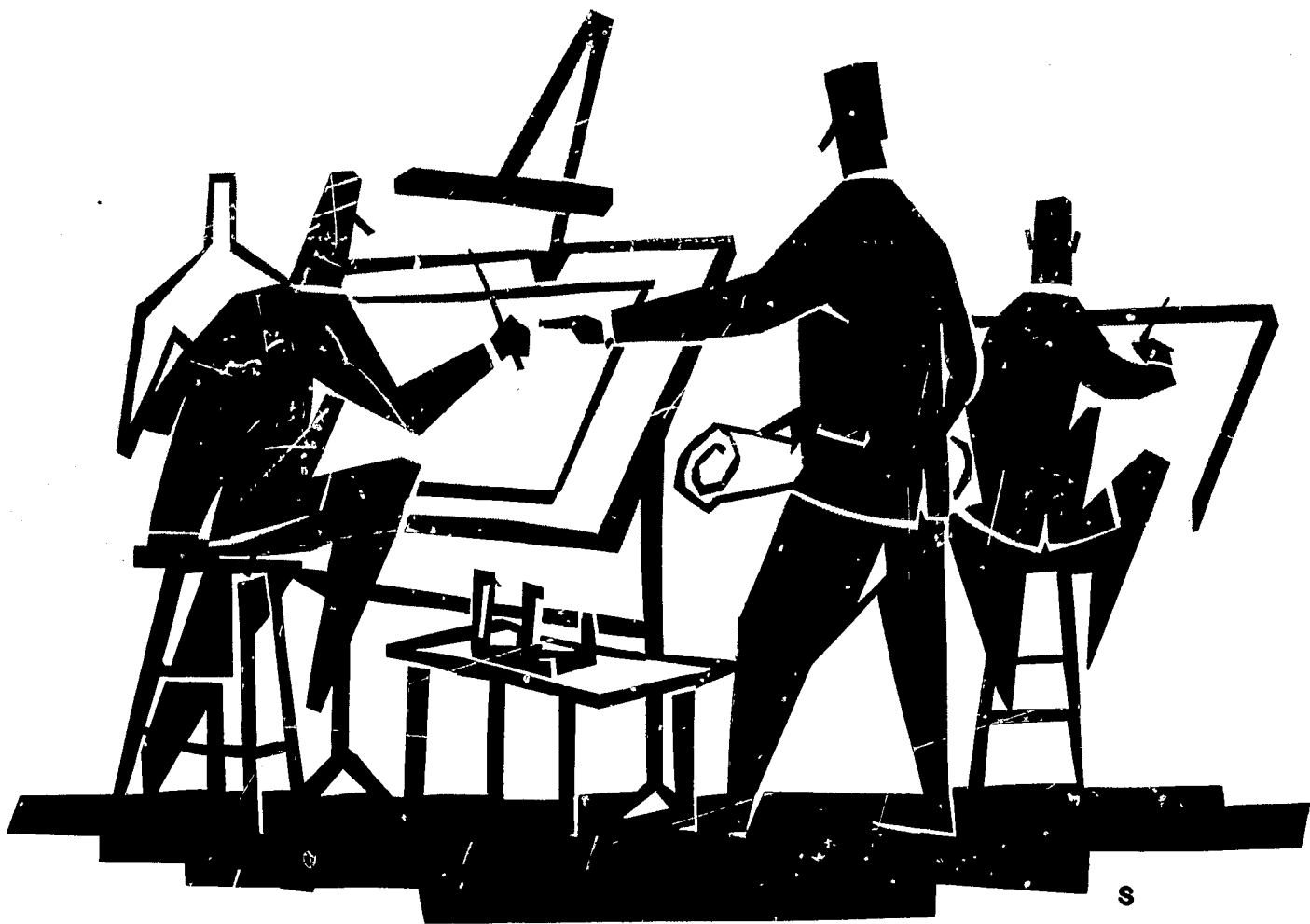


Reading lounge of Library, American River Junior College, Sacramento, California

# NEW DIMENSIONS

in PLANNING

2





# FLORIDA PREPARES FOR TOMORROW

JAMES L. WATTENBARGER

While it has been repeatedly emphasized that Rome was not built in a day, no one has ever described the extent of long range planning carried on in that fair city. Possibly the final destruction of the city by the Vandals would not have been so devastating had more thought been given to long range planning.

## LONG RANGE PLANNING

The State of Florida has been invaded not by the Goths, Visigoths, and Vandals, but by people from all parts of the United States. These "invaders," coming into Florida at the rate of more than 3000 people each month, represent all levels of educational accomplishment and attainment. They particularly represent a need for increased educational facilities at all levels. Long range planning is being done in Florida to provide educational opportunity for all our people, new residents as well as old.

In the past, Florida's junior college development has been relatively slow. The first college with public support was established twenty-five years ago in West Palm Beach. The first law authorizing public junior colleges was passed in 1939. However, when an analysis of the total educational situation was made by a Citizens' Committee in 1947, the junior colleges were included as a definite part of the public school system. After this law was passed, two privately organized junior colleges became public and two more new colleges were organized. These five institutions served the state until last year as Florida's only public junior colleges.

In 1953 it became apparent that Florida's population would require much more post high school educational opportunity than was then available, or than would become available, unless considerably more planning was done. The Council for the Study of Higher Education was appointed by the Board of Control and began its study, mak-



ing a preliminary report in the spring of 1955. Among the recommendations made by this Council in January, 1955, was that a separate study be conducted to develop plans for the expansion of the community junior college program. This recommendation was effected by the establishment of the Community College Council by the Florida Legislature and the appropriation of \$60,000 to make this study.

The Community College Council consisted of seven lay citizens from various parts of the state who also were serving as a State Advisory Council on Education, plus three professional educators, the State Superintendent of Public Instruction, the Executive Director of the Board of Control, and the president of a public junior college. These ten people established some basic policies as guides to the long range development of community junior colleges at the beginning of their study.

These policies were in turn, based upon carefully expressed principles of community junior college development. They were outlined as a result of junior college experience in all parts of the United States as well as in Florida:

1. Local control is an essential part of good community junior college operation.
2. Joint financial support from both state and local areas is important in providing adequate support and in encouraging local initiative.
3. The community junior college can be expected to develop most effectively if it fits into the established pattern of school administration of the state.
4. A broad concept of program and function is necessary to the philosophy of a good community junior college.
5. Continuous examination and analysis of this level of education to determine the need for improvement in all phases of the community junior college program is essential.

These principles have been similarly stated by Koos, Sexson, and many others. It was felt that documentation of the soundness of these statements as guiding principles within the state was not difficult to accomplish. Ample experience in local control has demonstrated its worth and value in terms of long range development in Florida. The necessity for joint financial support has been readily accepted. The tax structure as well as school administration practices in Florida has provided fertile ground for junior college development as a normal, natural, and logical extension of local public school systems into higher

education at the junior college level. The proven value of broad and comprehensive programs has been demonstrated through enthusiastic support of the public.

The Community College Council based its thinking upon these basic principles and was guided by them in the planning which followed. The law which created the Council charged it "to formulate a long range plan for the establishment and coordination of community colleges in areas most suitable and most in need of such institutions from the standpoint of economic and physical well-being of the student as well as the relief afforded the institutions of higher learning of the state, both public and private, in the abnormally high increase in student as well as the relief afforded the institutions of higher learning of the state, both public and private, in the abnormally high increase in student population to be expected in the coming years."

#### **LONG RANGE POLICIES**

From the start, the Council focused its attention on the following long range policies:

1. The community junior college as a public institution should be locally oriented with a maximum of local control and subject to State Board of Education regulations. The method of financing these institutions should follow the basic idea and principles of the Minimum Foundation Program as developed by the Florida Citizens' Committee on Education and enacted by the 1947 Legislature.
2. The community junior college should become a center of post high school education and community education for adults.
3. The long range plan should envision an opportunity for the educational needs of every person according to his own interests and abilities.
4. The community junior college should develop within the existing framework of public education. The State Board of Education should establish standards and regulations and provide personnel and facilities for implementing these regulations as well as consultative services for aiding the growth and development of these institutions.
5. Since the community junior college parallels some of the work carried on in the state university, it is essential that these inter-related programs be coordinated and that appropriate arrangements be developed which will relate the work of these two units of public education.

range planning and development as well as a concept of educational service peculiar to the community junior college. The Council suggested three major steps which should be taken in this planning. Orderly and planned development was considered to be an essential consideration. Poorly located institutions with little community support had never been a part of the picture in Florida. It was hoped this would continue.

#### PREPARATION FOR ORDERLY DEVELOPMENT

**Step One:** The Council made a statewide examination of all statistical data which could be used to project the population, economic, and educational needs of each county in the state. A major result of this first step was the establishment of a priority system which placed each county in one of four categories.

**Step Two:** Local surveys were made to determine the readiness of local people to support a community junior college. The feasibility of their establishment was also considered.

**Step Three:** This involved the study and planning necessary before the actual establishment of a junior college.

In the research work involved in Step One, U. S. Census data was examined, prepared information concerning the trends in tax collections, property evaluations, and birthrates, and polled about 25,000 high school seniors. Every state agency including the Employment Service, the State Library, and the Sheriff's Bureau was consulted. Many ways of evaluating the information were tried. Statistical devices were used to give objective ratings by which needs could be measured.

It quickly became apparent that although the county in Florida is the smallest administrative unit for school purposes, in many cases a county would not be large enough to support a junior college. This fact required the development of criteria for designating feasible areas (counties or groups of counties) which could be described as potential junior college areas. These criteria were the result of considerable research as well as analysis of experience in Florida and other states.

The criteria are as follows:

1. No area should be smaller than one county.
2. When more than one county is considered, no area should, in general, have a longer than 30 mile travel radius to an institution.
3. The potential enrollment (as measured by high school enrollment) for Priorities One and Two should not be less than 400 full time stu-

dents, and the minimum potential enrollment for Priority Three should be 200 full time students.

4. The growth potential of the area should be high if it is near the lower limits of these criteria.

Using these criteria and the data collected in Step One, the state was divided into 31 junior college areas. Four of these were already supporting junior colleges leaving 27 new areas to be developed. Since all of them could not be started at one time and since one essential consideration in community junior college development is local support, the Priority System was used to provide for orderly development. The four priorities are defined as follows:

**Priority One:** Those areas which are characterized by larger concentration of population, high indications of need for education services, a demonstrated positive attitude toward such expansion, and definite indication of ability to contribute to the support of a community junior college.

**Priority Two:** Those areas which meet the requirements of population and need for educational services but do not reach a comparable level in the expression of a favorable attitude toward a community junior college and the ability to support such a program.

**Priority Three:** Those areas which require further study and should be considered for later development.

**Priority Four:** Those areas which should be developed in the future when additional evidence of need and support becomes available.

As Step Two of the planned study was undertaken, fourteen regions in the state were designated as Priority Two areas, seven as Priority Three areas, and 13 counties as Priority Four areas. No Priority One areas were designated until Step Two was completed.

In preparation for Step Two, each county in Priority Two (this included 17 counties--14 areas) was requested to send representatives to a meeting in the State Capitol. At this time data was presented to them and areas interested in obtaining a Priority One status were requested to appoint a local survey coordinator who could assume responsibility for Step Two in his own area. Nine of the fourteen areas appointed coordinators and these individuals met together for a three-day session to develop the outline for the local surveys.

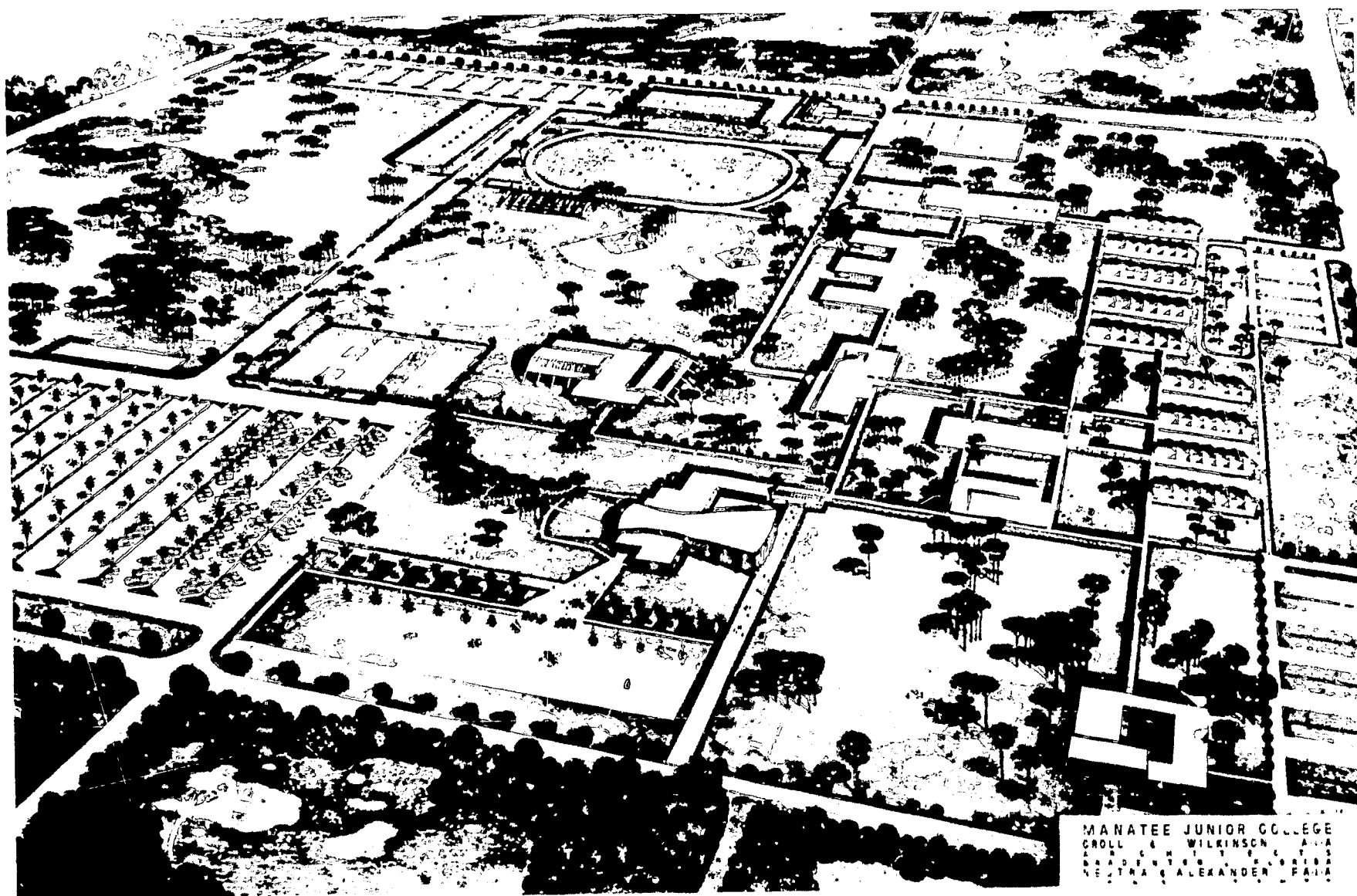
Citizens' Advisory Committees were appointed by the local school boards to work with the coordinators. The work was carried on by the local people. The Council providing consultant help when requested. Briefs were presented at the end of three months' work. These



briefs summarized the needs of the area, rechecked the Council's data, and presented evidence that the local areas were ready for community junior college development. On the basis of this evidence, the Council recommended that six areas be placed in Priority One, the other three in Priority Two-A.

These Council recommendations were in turn approved by the State Board of Education and funds were appropriated in the 1957 session of the Florida Legislature.

Procedures were formulated enabling the remaining twenty-one community junior college areas to achieve approval for establishing community colleges in their areas. When all thirty-one areas are established, 99 per cent of the population of Florida will be within thirty to thirty-five miles of a community junior college. The other one per cent of the population is located in six small counties which have consistently lost population since 1930. If the population of these six

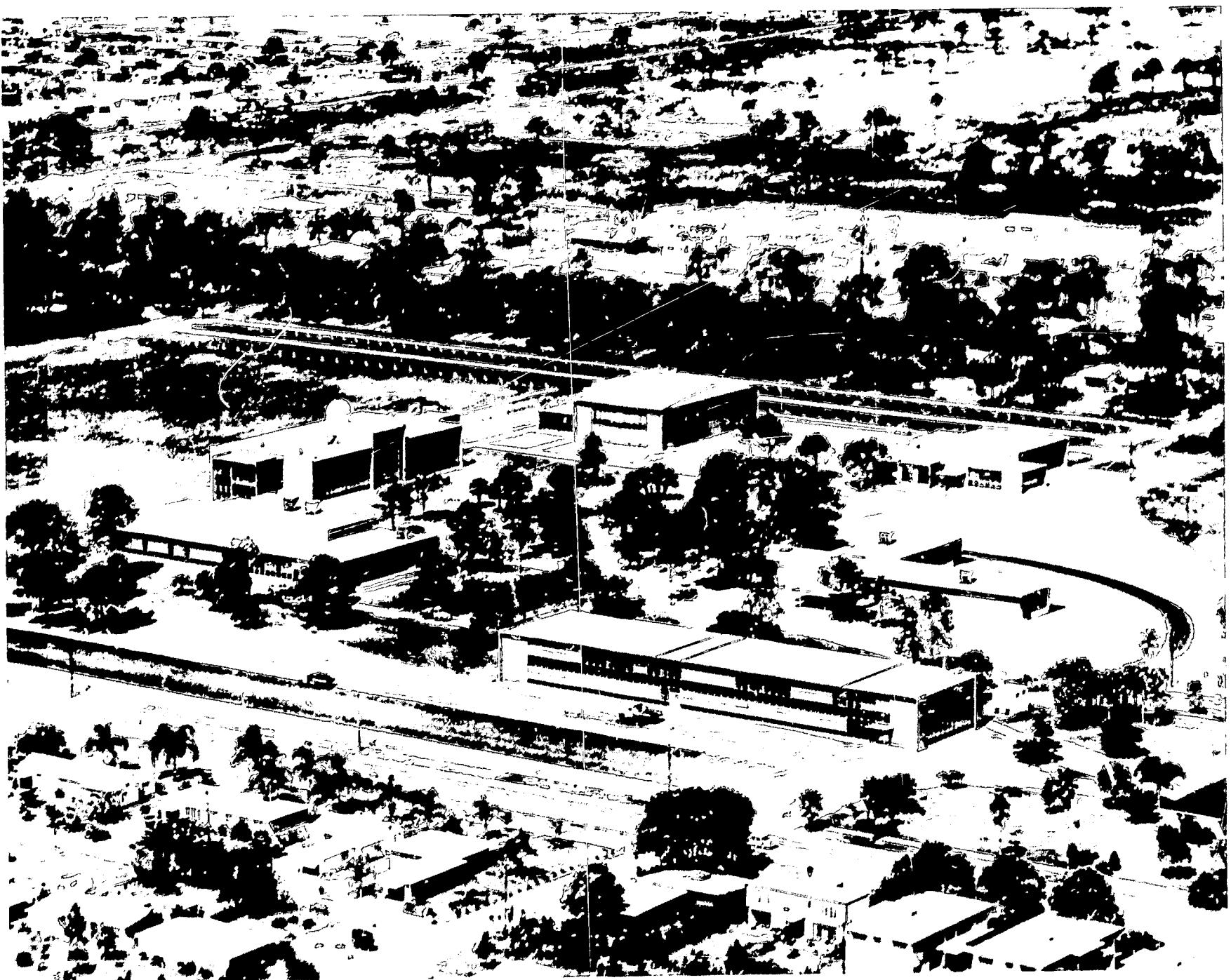


Architect's perspective rendering of the Manatee Junior College campus, Brandon, Florida

counties increases they may be developed as community junior college areas when a potential enrollment of at least 200 students is attained. They may be approved for Priority Two upon reaching a potential enrollment of 400 students.

Four areas in Priority Two, and three areas in Priority Three are currently conducting surveys to determine whether they can request Priority One before the 1959 Legislature meets.

At the present time, the completion date of this plan is not known. Future changes in the concentration of population may require that the boundaries of some of the areas be changed. Eventually increases in the concentration of population will require the addition of new colleges, thus decreasing commuting distances.



A portion of the campus at St. Petersburg Junior College, St. Petersburg, Florida

## STATE PLAYS IMPORTANT ROLE

Previous to 1953 only four areas in the state supported junior colleges. These were established in 1947 as a joint effort on the part of the state and local communities. In 1955 the principle was established that the cost of the buildings for these junior colleges should be borne by the state rather than the local district. Because of a tax structure containing a five thousand dollar homestead exemption and a twenty mill limitation on property taxes, the local areas are limited in the amount of money they may raise through taxation. However, the government of the State of Florida has much greater and varied sources of revenue including a sales tax, liquor tax, cigarette tax, gasoline tax, and a license fee for automobiles; all these go into the general fund.

The plan at the present time is to build the junior colleges on a pay-as-you-go basis. Under this principle, a portion of a campus is built and later expanded as needs are further defined. Each locality has been required to furnish the site for the college, which must be approved by the State Board of Education and the State Department of Education in terms of acreage, availability of utilities, and suitability of the land for building purposes.

Florida has experienced great changes in terms of public support for junior colleges. The 1947 Legislature made the junior colleges part of the public school system, stating that they should be supported just as any other grade level, including equalization. In 1951, the State Legislature debated whether the junior colleges might become too expensive and should be abolished. Two years later the solons decided that these institutions were essential to the state and that the colleges should not only be continued but expanded.

## CITIZENS COMMITTEES ADVISE STATE LEGISLATURE

The reasons for this latter switch in public opinion is very interesting and complex. Possibly one of the more important factors was that citizens committees were utilized in planning the system of higher education of the state. The 1947 law was the result of a two year study of a citizens committee. This committee had a professional staff to help it develop its recommendations. The members of the committee were citizens appointed by the governor from various parts of the state.

The Community College Council, which made its report to the 1957 legislature was also a citizens committee. This committee was composed of a newspaper publisher, a lawyer, businessmen, and people of various other economic endeavors representing different parts of the state. The Council, which was responsible for the report which went to the State Legislature, did not "rubber stamp" a prepared report; they were men who secured information, listened to consultants,



and then made their decision. There were several occasions in which the director of the study would have preferred a decision different from that which was made. However, as it turned out the decisions of the Council proved to be most wise. For example, after studying the briefs and reports from the various parts of the state, the Council decided there were six localities that were ready for new junior colleges. Being a rather anxious junior college man, the director of the study preferred nine areas. Further study proved that the decision of the Council was preferable.

The county boundary is the school district in the State of Florida. Every type of educational activity, elementary, high school, adult, vocational, and junior college, is carried on within the boundaries of the county. However, junior college education may be offered only in those counties that are approved for such by the State Board of Education. Each of the local school boards has appointed a local citizens advisory committee to work with it in developing the brief for determining whether or not the district is ready for junior college development.

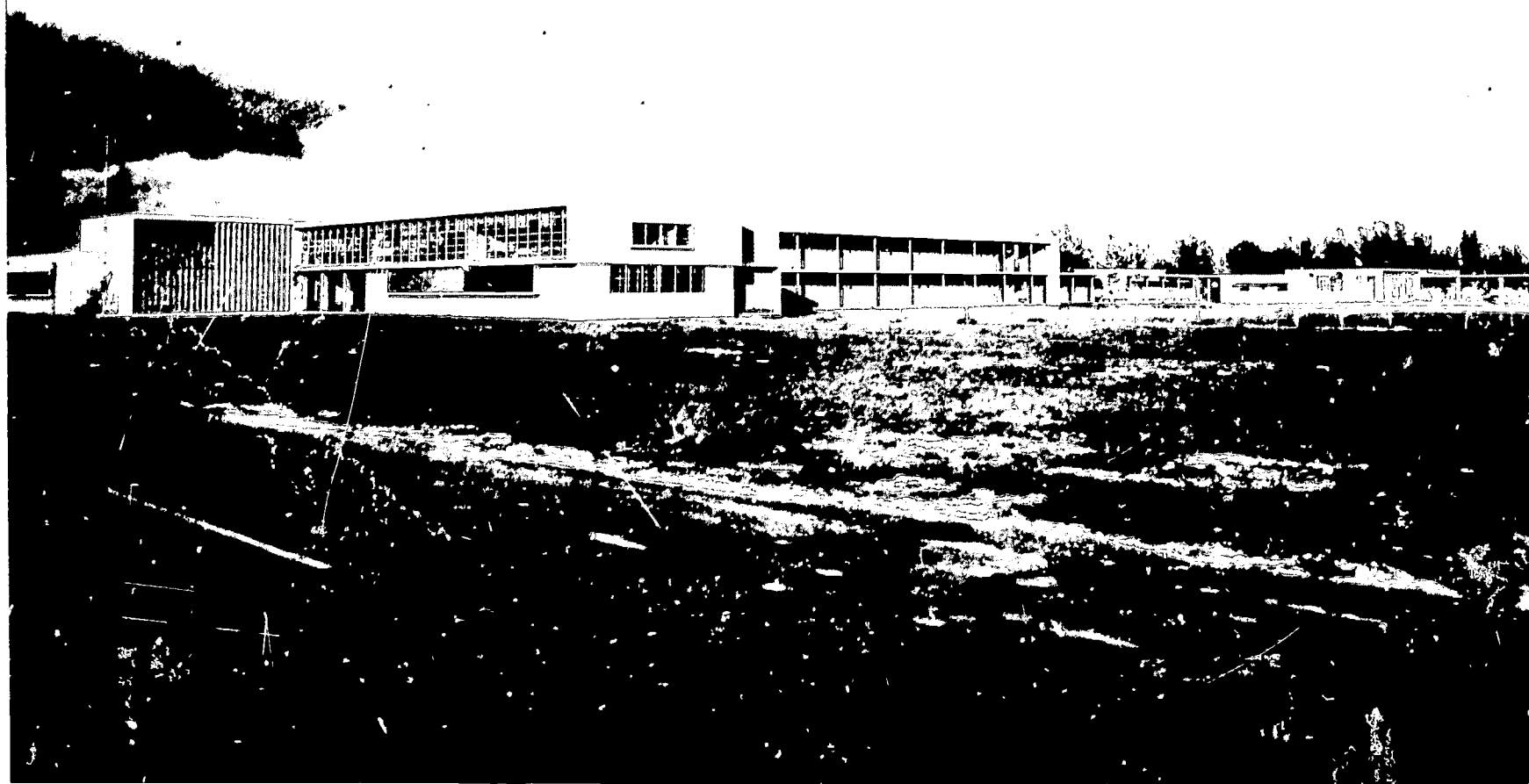


Library Building, Pensacola Junior College, Pensacola, Florida, features sawtooth roof with clerestory lighting



An advisory committee was recently formed in a county which in 1950 had a population of only twenty-five thousand. It now has more than tripled this figure. This county did not receive a priority rating in the 1957 session of the State Legislature, but it is now seeking such a rating. The questions that were asked by these people as they began this study illustrate the interest and level of concern they have for the development of a junior college in their community. To professional educators these questions may appear elementary and superficial. They indicate a lack of understanding of the objectives of the junior college; but these are the questions that the people must ask before they can begin to understand. For this reason, one of the most important jobs facing junior college leaders is that of helping the people understand what a junior college is, what it can do, and how it can best serve the community.

Citizens committees are utilized at two stages in planning junior colleges in Florida. A temporary citizens committee is appointed by the county school board to determine whether or not the county should initiate procedures to obtain the establishment of a junior

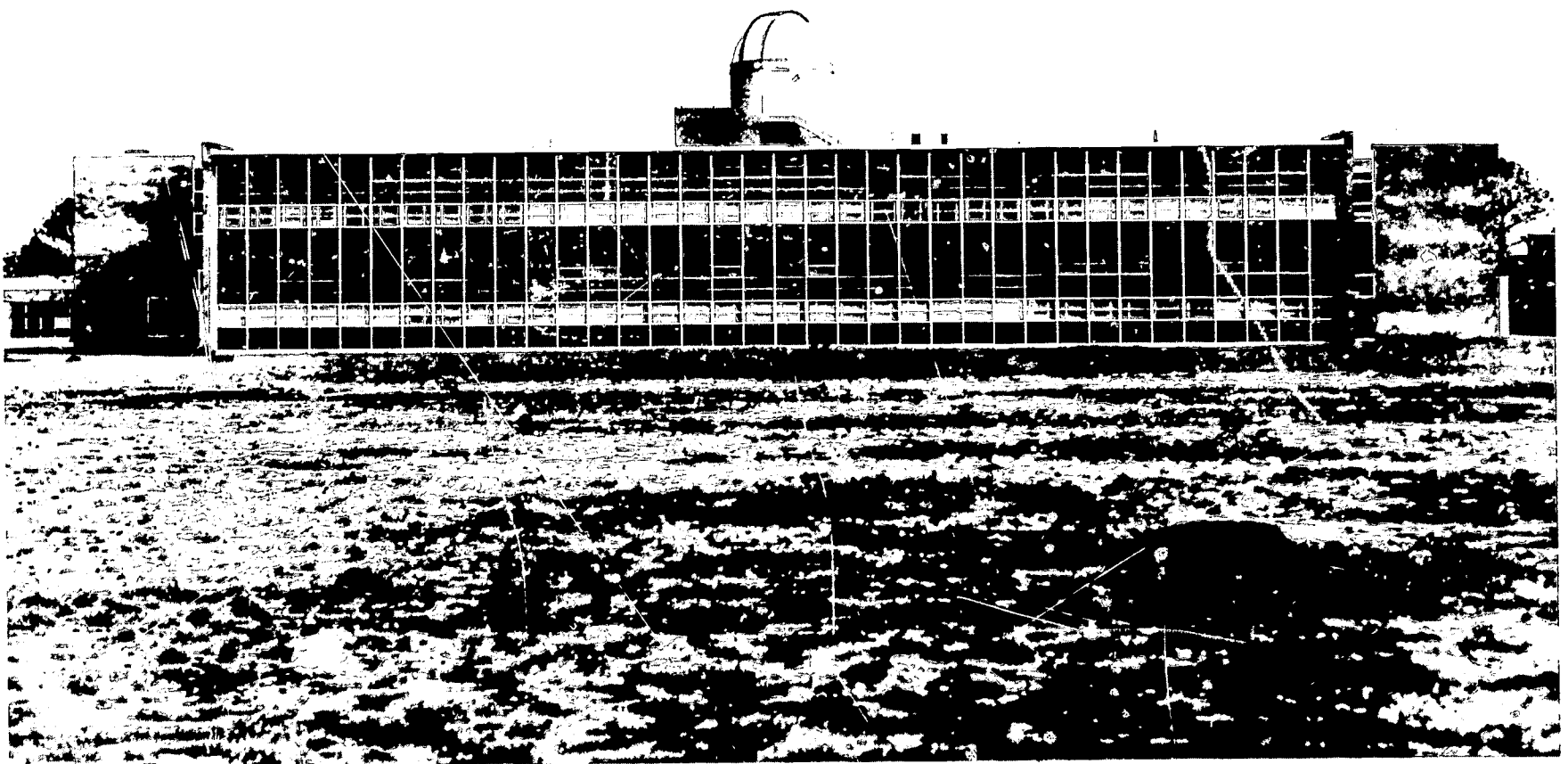


Administration, Library, and Classroom Buildings, Palm Beach Junior College, Palm Beach, Florida

college. The second citizens committee comes into being when the State Board of Education approves a junior college for the county. After the latter citizens committee has been appointed by the State Board of Education the county school board may take no action in reference to the junior college unless the matter has previously been considered and recommended by the advisory committee. This advisory committee meets regularly, generally once a month, with the president of the junior college to help develop policies and make other kinds of recommendations in connection with the operation of the proposed college.

The school officials in Florida have found that this type of operation has been an important factor in developing community understanding of the role and function of the junior college. The experience in Florida has been that when the public receives adequate information about the junior college and is permitted to participate in the decision-making process, public understanding and public support results. When the people understand, they cannot fail to support the objectives of the junior college.

-----



Science Building, St. Petersburg Junior College, St. Petersburg, Florida, showing Observatory and Planetarium

# FROM COMMUNITY CONFLICT TO ACHIEVEMENT: A CASE STUDY

J. HART CLINTON

After a long period of indecisive debate concerning its role, marked by increasing community bitterness, the San Mateo Junior College District has concluded a year of achievement which was remarkable for the speed and extent of the accomplishments. The event which opened the door to the new era was decisive public approval on October 15, 1957, of a substantial bond issue to underwrite a new campus for the College of San Mateo. Behind this victory, however, was a more fundamental change in the climate of public opinion, made possible by general acceptance of the careful work of a widely representative and respected citizens committee.

The decisive success of the bond issue brought about a series of collateral achievements, including a full five-year accreditation by the Western College Association, replacing a short-term approval previously given and the completion of a detailed long-range master plan to guide the development of the District until 1982. To understand the nature of the basic transformation of the prospects of the District in so short a period, a brief review of the background is essential.

## THIRTY-FIVE YEARS AGO

The San Mateo Junior College District has been in existence for more than thirty-five years without a unified, permanent campus designed for college use. The District was formed in 1922, and initially served the entire San Francisco Peninsula and the East Bay. Makeshift facilities housed the institution until 1939, when a two-campus phase was opened with the completion of a science center on the new 30-acre Delaware Campus on the border between San Mateo and Burlingame. This supplemented the three-acre Baldwin Avenue Campus in downtown San Mateo.

The plan evolved in the 1930's anticipated that the Delaware Campus would gradually be completed on a pay-as-you-go basis. The campus

had been selected because of its location between two important centers of population, and because of proximity to existing lines of transportation to serve an enrollment of 1000 to 1500 students.

The sudden influx of veterans at the close of World War II forced a radical change in facility plans. Because the enrollment explosion was expected to take the form of a large immediate increase, terminating in a relatively short period, the College was interested in acquiring ready-made temporary facilities. The Merchant Marine Cadet School at Coyote Point, approximately one and a half miles from the Delaware Campus, appeared to be exactly what was needed. The Federal Government leased the facilities to the College in the fall of 1947. Construction at the Delaware Campus was postponed, although a vocational shops building had been completed in 1946. A three-campus phase began with students shuttling between the downtown Baldwin Campus, the Science Campus at Delaware, and the new Coyote Point facilities on the Bay. This improvised arrangement solved the immediate housing problem, but at the cost of a continuation of a split campus.

#### THIRTY YEARS LATER

In 1952 a complicated four-year search for a solution to the campus problem began. There was a feeling that money could be saved for the taxpayers by making joint use of the lands at Coyote Point for both recreational and College use, and accordingly the Federal Government was persuaded to deed to the College the 29 acres used by the Merchant Marine Cadet School. In the process, however, County Government was by-passed. Failure to coordinate with the County Government was a critical defect of the plan inasmuch as the County controlled adjacent acreage which was needed to provide an adequate simple campus for the College. The political disputes incidental to the process described above created a poor press for the College, and opened the way for agitation by a series of pressure groups. The lack of a plan capable of arousing general consent led to a protracted series of alarms.

The split in the community was evidenced in a number of ways. Intense argument developed between advocates of "economy," who urged that the small 30 acre campus at Delaware would make an adequate campus, and the proponents of a plan based on securing approximately 100 acres for a completely adequate permanent campus. There was a revival of differences between adjacent communities concerning the best location for a campus. "Solutions" to the campus impasse were important issues in trustee elections. In the absence of an attractive plan, resistance to the idea of a bond issue became formidable. This was in part a result of a series of bond issues which had been presented as emergency solutions to the mounting problems caused by the rapid growth of the Peninsula.



Bond issues for elementary schools, high schools, and hospitals had been presented in rapid sequence. Only an issue with political appeal could hope to pass; any proposal on which there was open discord was doomed.

Some measure of the poor climate of opinion is suggested by the following extracts from an editorial which appeared in the San Mateo Times, November 6, 1953:

"The glacier-like progress of plans to consolidate the various branches of the San Mateo Junior College . . . . is most disheartening.

"The fine determination of a year ago to get on with this job seems to have been sidetracked into a dozen different alleys--all with dead ends.....

"This procrastinating and weary prolonging has certainly endangered the prospect of success for any real benefit for the college. It has unquestionably prevented legitimate expansion of the college in a period when expansion has been common to the communities it represents.

"The whole Peninsula needs to know, as quickly as possible, if the San Mateo Junior College is going ahead with the rest of the Peninsula or is going to become a misfit institution incapable of physically handling the job it is intended to do."

### THREE YEARS OF DRIFT AND INDECISION. . .

Unfortunately, a period of nearly three more years of drift and indecision was still ahead. After informing the community that Coyote Point was to be secured from the Federal Government as a gift, a surprise announcement was made that the College was leasing the main building on the Baldwin Campus to the Federal Government for use in the Navy Reserve Training program at a dollar a year for twenty years. This made it impossible to sell the strategically located downtown acreage.

The surprise announcement that the College was leasing the main building on the Baldwin Campus in consideration of the government's deed of the Coyote Point Campus, in a single stroke developed and congealed the opposition of the following public opinion groups:

1. The local press became hostile because the deal was negotiated and handled secretly without any advance public announcement of what was being done;

2. The downtown San Mateo interests were alienated because the Trustees had, by leasing the Baldwin Campus main building to the government, removed from the downtown area a very valuable piece of property which was thought to be needed for the development of the City of San Mateo;

3. The County recreation and small boat interests publicly announced their displeasure that the Coyote Point Campus was to be devoted to College use and would no longer be available for recreation and small boat use.

A series of unanticipated problems led to the abandonment of the idea of developing a unified campus at Coyote Point. The acreage was located directly under the main approaches to the San Francisco International Airport; the prospect of jet aircraft intensified concern over safety and noise factors. Studies by a joint committee representing the County recreation authorities and the College Board of Trustees produced a definitive conclusion that shared usage of the Coyote Point lands for park and College use was impractical.

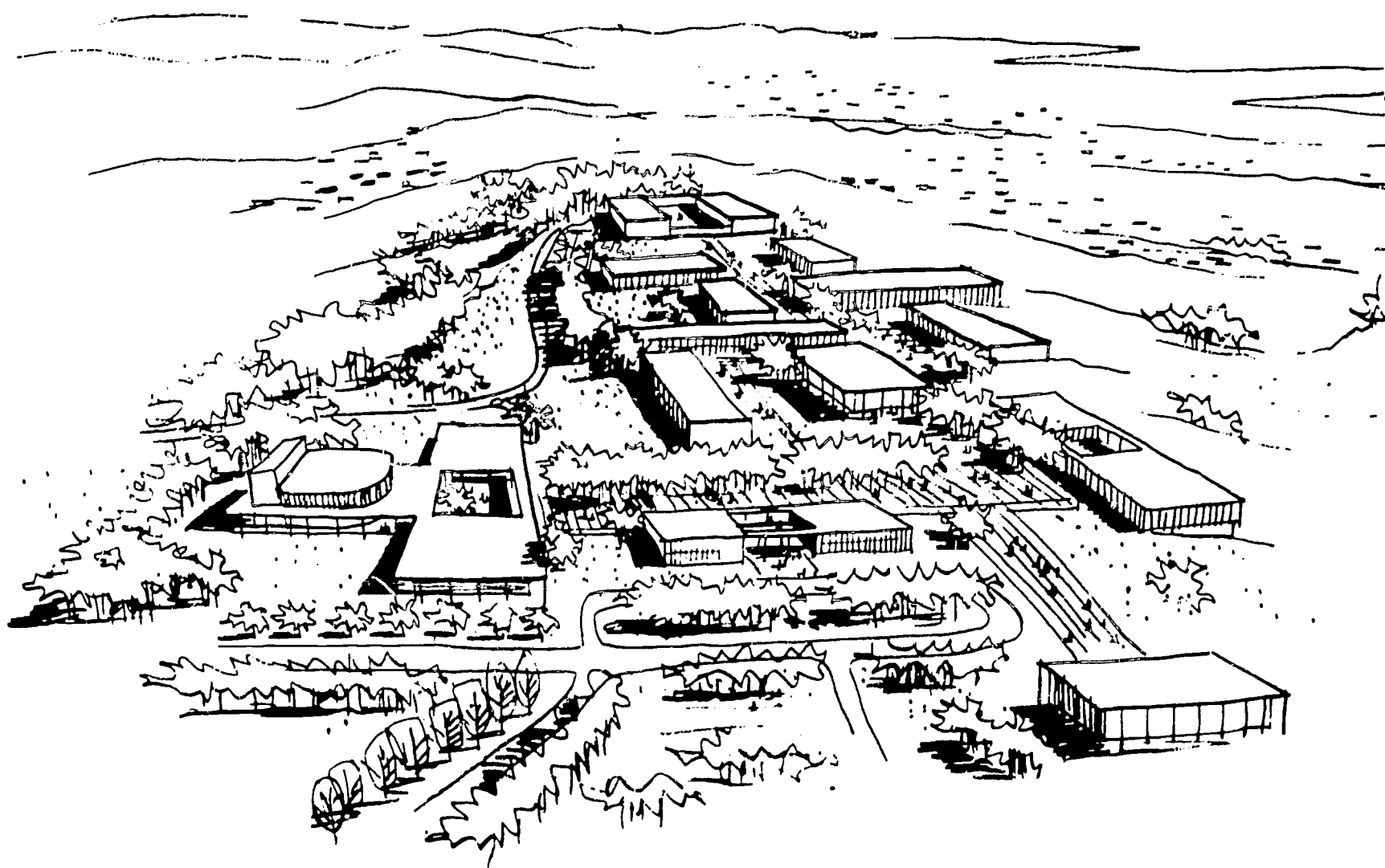
In 1955 the Board of Trustees accepted recommendations of educational and architectural consultants which called for a new site in the hills west of San Mateo, the so-called "19th Avenue" site. This was a good solution to the problem, but by this time community sentiment was seriously divided. By December, 1955, the Chairman of the Education Committee of the American Association of University Women called for a "serious and impartial study committee of lay citizens to ask the questions and find the answers which must precede a sound decision." In April, 1956, the League of Women Voters published a study summarizing two years of work, calling for a factual survey to determine if the development of the Delaware Campus might not offer the "most reasonable solution to the site dilemma."

#### . . . THEN A FRESH APPROACH EXCITES NEW INTERESTS

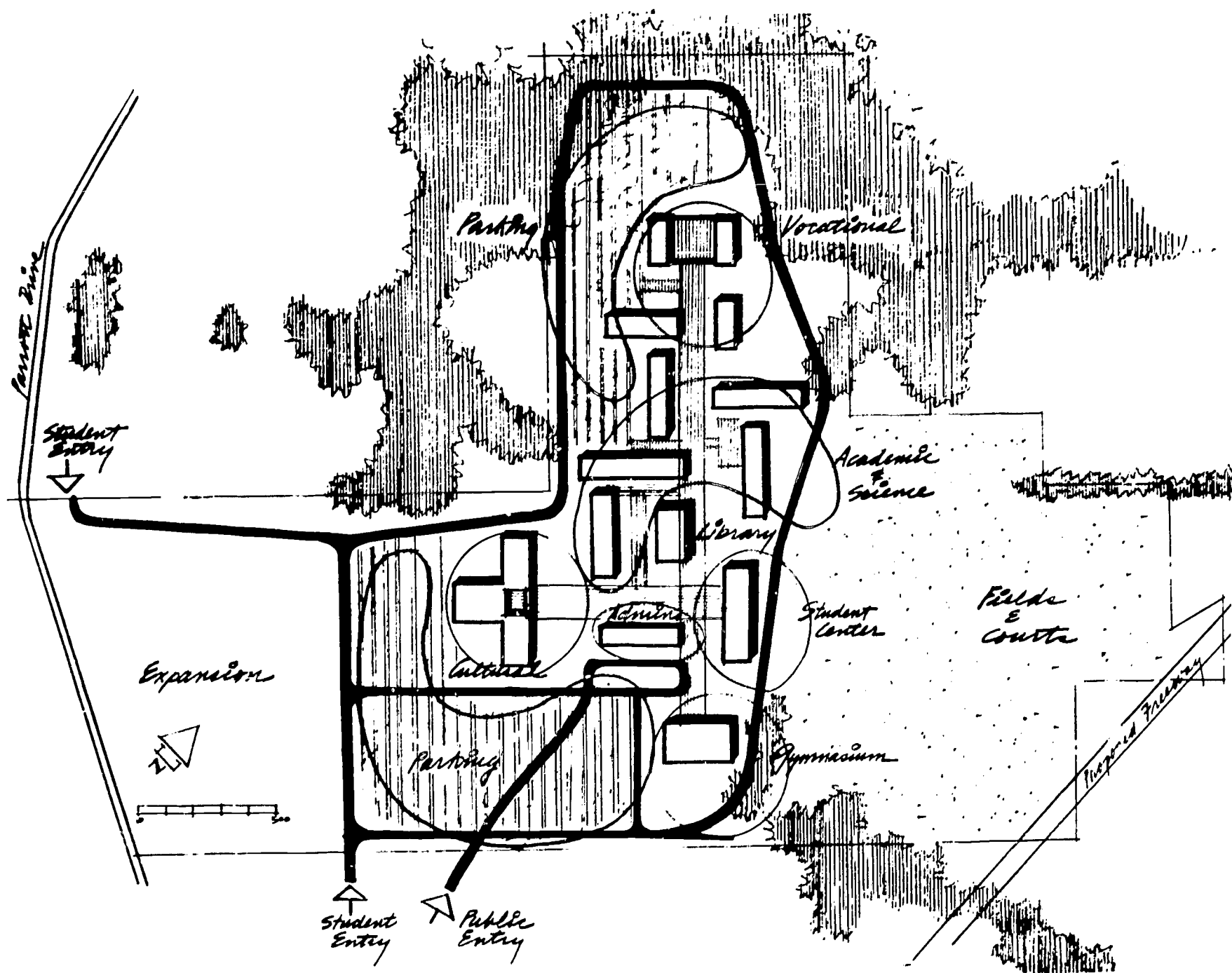
By 1956 it was clear that a completely fresh approach to the site problems of the San Mateo Junior College District was essential. In May of that year the Board of Trustees appointed the publisher of the Burlingame Advance and the publisher of the San Mateo Times co-chairmen of a committee to study the financing of a campus for the College. This did not meet with the particular approval of either of the gentlemen. They thought the announcement was poorly timed. In addition this had not been cleared in advance. There was much to be done before anyone could go before the community with a program for financing a campus. Someone would have to develop an acceptable program for the District before it would be possible to suggest financing a new campus.

After Dr. Julio L. Bortolazzo was appointed Superintendent of the District, he conferred with the two newspaper publishers concerning the public relations problems that the District faced. Shortly after this discussion, Dr. Bortolazzo, on August 1, 1956, suggested to the Board of Trustees that an impartial advisory committee be appointed to clear up "the considerable misunderstanding and division of opinion" which existed in the community. The Board concurred and appointed the two publishers co-chairmen.

Newspaper publishers are generally opposed to accepting committee responsibilities which involve policy determinations on which editorial stands may have to be taken at a later date. The publishers of the two newspapers in the District knew that they were accepting a "hot assignment." They believed that it would be necessary to permit the conflicting interests in the community to debate in committee without the risk of having their views exposed in the newspapers.



Architect's perspective rendering of the new campus for College of San Mateo, San Mateo, California



Preliminary sketch indicating proposed relationships of building for College of San Mateo, San Mateo, California

Additionally, they agreed the Junior College problem in San Mateo was a "mess" and unless the atmosphere could be cleared by a joint effort of this kind, the future of the District would be in considerable jeopardy, and, in fact, it might not be possible to develop the Junior College campus in accordance with the needs of the community for many, many years to come. Under these circumstances they accepted the co-chairmanship of the Citizens Committee, but only with the understanding they could name committee members and would be given a completely free hand without interference in any way by the Trustees.



## **AN ADVISORY COMMITTEE IS FORMED**

Particular care was taken in choosing members of the Committee, both to secure community leaders who enjoyed general respect and to balance major points of view. The twenty-eight members finally selected came from all parts of the large District. Three members represented women's organizations. Occupational groups were represented by the following: two labor union leaders, one merchant, two real estate men, two public utility executives, four publishers, three attorneys, two insurance brokers, two corporation executives, one wholesale florist, one electronics executive-owner, four bankers, and one owner of a small business. The devotion of these members to community service was evidenced in the fact that all twenty-eight of those nominated agreed to serve. Moreover, it developed that there was a very high percentage of attendance at the nineteen study sessions held by the Committee over a period of nine months.

The Committee planned its own proceedings and called its own witnesses. It sought to make a thorough review of all aspects of the problem, without preconception as to the best solution. To make absolutely certain that the committee proceedings would not become a forum for continuing the battles of the previous four years, all meetings were closed sessions. With four publishers present at such a continuing feast of potential headline material, it took rare self-discipline to preserve the code of absolute secrecy.

The Committee reviewed in detail a large volume of material before it began its interviews and site surveys. A historical study of the College and a detailed analysis of enrollment trends, prepared by the College staff, provided a starting point. California state trends were intensively studied, especially the recommendations in the 1955 "Restudy of the Needs of California in Higher Education," and the 1957 "Study of the Need for Additional Centers of Public Higher Education."

Fourteen individuals appeared before the Committee to discuss aspects of long-range planning, and all answered detailed questions raised by committee members. Among those who were heard were the County Superintendent of Schools, three key officials of the State Department of Education, the District Engineer of the State Division of Highways, three educational consultants from Stanford University, members of the architectural firm of John Carl Warnecke, two members of the Board of Trustees of the Junior College District, and the Superintendent of the District. A considerable part of committee time was devoted to site surveys. In addition to preliminary map and aerial photograph studies, visitation trips to ten sites were arranged. Two other sites were investigated but not inspected by the whole Committee.

## A MASTER PLAN EVOLVES

On the basis of its studies and interviews, the Citizens Committee published a thirty-page report on June 25, 1957. The report contained eleven major policy recommendations which, taken together, constitute an outline master plan for a twenty-five-year period. The Committee suggested that the Junior College District look toward the ultimate establishment of three complete two-year colleges. For the first college, a site in the hills west of San Mateo, now officially referred to as College Heights, was recommended for immediate acquisition. Further, it was urged that a second site in the north part of the District be acquired promptly, for development several years hence. Ultimately, a third site on the coastside was recommended for continuing study and action. To finance capital construction at the first site, the Committee recommended a bond issue instead of a pay-as-you-go plan. The report met head-on the question of whether the existing properties owned by the District could be expanded into permanent educational centers. The Committee reported that in its opinion none of the three campuses owned by the College was amenable to economical expansion into a unified single campus to accommodate 4,000 day students. Orderly sale or disposition of existing properties was recommended. The Board of Trustees acted swiftly to review and implement the recommendations of the Citizens Advisory Committee. In August, 1957, an eminent domain suit to acquire acreage on College Heights was initiated. On October 15, 1957, a bond issue for \$5,900,000 received a strong three-to-one affirmative vote. This supplied the financial resources to implement the plan which had evolved from the work of the Citizens Committee. A strong base for future growth by the District was thus quickly created, and at long last a solution to the critical problem of permanent facilities was achieved.

The experiences reviewed above, both the protracted impasse and the swift positive action of the last year, suggest that there is only one sure foundation for public confidence in the plans of a governmental agency: full revelation of all pertinent data, and presentation of carefully-framed plans which can survive critical scrutiny. There is a vast difference between a lay committee called in to "sell" a bond issue on the basis of plans prepared before the committee was ever created, and the true advisory committee which is called upon to evaluate several possible approaches to an educational problem in advance of final planning. The use of the latter type of committee should be limited, for its function must always remain advisory, with final power in the hands of those who were elected democratically to conduct public affairs. But when there is a question which involves major public decision, as was the case of the Junior College District, the true advisory committee can perform a valuable function--provided that it is given independence and is widely representative of the community.

-----

# COORDINATING FUNCTION OF THE SUPERINTENDENT IN PLANNING

THERON L. McCUEN

The planning of facilities for an institution as complex as a junior college obviously requires the efforts of many agencies and people. If the development of plans is to proceed with optimum speed and effectiveness and if, indeed, the project is to result in a harmonious unit, the entire planning process must be carefully coordinated and integrated. This function of integration and coordination logically rests with the superintendent of schools. Within the appropriate context of his relationship with the governing board, he delegates responsibility, brings together participating agencies and personnel, reviews plans, evaluates and recommends policy.

The coordinating function will be reviewed here in light of recent experience in planning and constructing a new junior college campus at Bakersfield. The planning activity may be divided:

1. Policy and program development
2. The site -- its selection, utilization and general development
3. The statement of requirements for the college
4. Building planning

## POLICY AND PROGRAM DEVELOPMENT

This phase is concerned with the preparation and development of a basic district policy statement relative to the need for a junior college and its relationship to the district organizational pattern. In connection with the determination of need will be an analysis of enrollments at the junior college level with projections for the future. Included, too, should be a statement of the concept and unique functions of the junior college, its history, and its relationships to the collegiate pattern in the State. Areas of the curriculum adapted to local needs may be determined in part by an Occupational Survey--with depth interviews with lay people in various industries. Bakersfield conducted such a survey in 1949 at the inception of planning

for the new junior college campus. If the construction is dependent on a financing plan not yet activated through a bond issue or other means, this plan, too, should be included in the program or policy statement.

At this point in the planning, districts can profit through visits by governing board members and administrative staff and architects to recently developed junior college campuses. New insights gained and the interchange of ideas during and following such visits are invaluable. Questions such as the following are typical of those discussed.

1. How does or should a junior college campus differ from a high school?
2. What is the desirable size of site for a junior college? What are the advantages and disadvantages of the varying sizes of sites of the junior colleges visited?
3. What are the advantages of various types of construction? Of materials? Of design?

#### THE JUNIOR COLLEGE SITE

With the above experiences as a background, the selection of the site may represent the next important step. At this stage the district is concerned with two main aspects: size and location. Here the administrative staff works with the governing board, architects, professional planning agencies, and the local planning commission having jurisdiction over the area in which the site is to be located. Consultations are held with the State Department of Education, Division of Schoolhouse Planning.

Concurrent with the selection of the site, the matter of utilization must be kept in mind. Consideration of problems of utilization must not wait until actual building planning starts and after the site is obtained. Such factors as shape, contours, and orientation must be considered. However, with the final selection of the site and at the start of building planning, definite studies of site utilization must be developed. These will involve architects, landscape architects, State Department of Education representatives, and school district staff. It is well for these studies to start with a general relationships of these, one to another. The architects, working with the landscape architects, can then develop a series of site studies to use in seeking the desired solution. These studies may then be evaluated in terms of adaptation to general site features, building relationships or proximities, and traffic patterns. A check sheet can be used by each evaluator and then a composite can be made showing a summary of scoring on all studies of possible site utilization by all the evaluators.



## THE STATEMENT OF REQUIREMENTS

The preparation of a statement of requirements or educational specifications for the college is a key activity in the whole planning process. The resulting document should represent a policy statement, flexible though it may be, to guide the architects in making their preliminary building studies and working drawings. This policy statement is developed through cooperative action of the professional staff and certain lay advisory committees. The planning should be under a general planning committee with sub-departmental committees to develop specific departmental requirements. The general committee draws the contributions of all sub-committees into a comprehensive whole. This, then, must be evaluated by the superintendent before he submits the final report to the governing board for adoption as a policy statement.

With the statement of educational requirements at hand, the architects can proceed with detailed studies of the individual buildings. They translate the statement of the school staff into layout studies for the review and interpretation of the staff. This is a basic step to the entire planning process and will continue over a period of several weeks or months. During this period coordination by the superintendent is vital to keep the process moving with dispatch. Schedules must be established and progress carefully recorded. With different sub-committees on the various buildings working with the architects -- but with representatives of the over-all planning committee present, together with the superintendent or his representative, the importance of the coordinating function should be clearly understood. Without such coordination and a systematic approach to the study, review and re-study of plans, much time can be lost at this stage of the project.

During the period of planning, continuous liaison should be maintained with the State Department of Education through the Division of Schoolhouse Planning. The latter gives valuable assistance in over-all planning, site utilization, and objective review of building studies and plans.

Following the approval of the governing board of the preliminary studies, the architects are ready to move into the stage of drawing the preliminary plans - floor plans and elevations. Finally the working drawings and specifications, the documents on which the actual construction is based are prepared. The functioning, utility, building value, and aesthetic appearance of the completed plant will result if the coordinating function is carried on effectively to the end that all participants, architects, school staff, governing board, State and local authorities, and lay people have had an opportunity to contribute their thinking and efforts in a constructive manner. The superintendent is the key person in making this possible.

-----



Aerial view of the 150 acre campus of Bakersfield College located on heights northeast of Bakersfield, California



Administration Building, Bakersfield College, Bakersfield, California

# PLANNING COMMUNITY JUNIOR COLLEGES

FREDERIC T. GILES,  
S. V. MARTORANA,  
and D. GRANT MORRISON

From Florida to Alaska, from New York to California, the community-junior college is being recognized as the best single solution to the problem of serving the rapidly growing demands for post-high-school education. Florida is projecting six new community-junior colleges this year; California and New York have each approved three more; Michigan and Illinois are considering long-range plans that propose between them almost 50 new two-year colleges. Most of the other states of the nation are investigating the possibilities that this kind of institution holds for helping them meet the "rising tide of students."

Unfortunately, there is a dearth of information on how to build facilities to house this new type of collegiate institution. Too frequently, the buildings are constructed and then an attempt is made to tailor a program to the building--unnecessary limitations usually result. Often the high school is used as a model or the traditional type of collegiate building planning procedure is followed. In either case the result leaves much to be desired. The fivefold role usually assigned to the community junior college cannot be confined within a plant modeled to meet the needs of either just a high school or a liberal arts college. The five purposes of a community-junior college are those that are attached to the following groupings of offerings: general education for all students who attend; preprofessional courses in the arts and sciences for all students seeking the bachelor's degree; organized occupational studies leading directly to employment after the two-year college; adult education and community services; and student personnel and guidance services to help students make wise and realistic career choices and personal decisions.

This article will attempt to describe briefly how one junior college carried through the planning of its new buildings and long-range campus development program. The process took over seven years and involved architects, educational and building consultants, administrators, and faculty and lay participants. Each was encouraged to



work in his area of greatest competence and to refer to others any problem not within his own areas of experience and training. The construction program is proceeding according to the plans that have been projected and occupancy of the new campus will occur in June, 1958.

#### GENERAL BACKGROUND

Everett Junior College is located in Everett, Washington, a growing industrial city of approximately 35,000 people, located 30 miles north of Seattle. Everett is the county seat; it has good harbor facilities, is a distribution center, and is the home of several of the largest lumber mills in the state. A considerable number of the residents work in Seattle and in the growing oil industry to the North.

In the fall of 1957, Everett junior college enrolled 2,350 students with 1123 full-time and 1227 part-time. Since its establishment in 1941, the junior college has been operating as the 13th and 14th grades of the public school system of the city of Everett. This is in accord with the general junior college laws of the state of Washington. The buildings, composed of a former elementary school and a large number of assorted war surplus buildings, have been overcrowded for at least eight years. In spite of this handicap, Everett junior college has gained acceptance by its constituency and is gradually becoming the educational and cultural center of the community. Each year there has been growing recognition of the fact that the continuance of the fine services of the college necessitated a new plant on a new site. This is evident from the history of the local bond issues, the character of the publicity given the college, and the generally popular enthusiasm that has been expressed for the new building program.

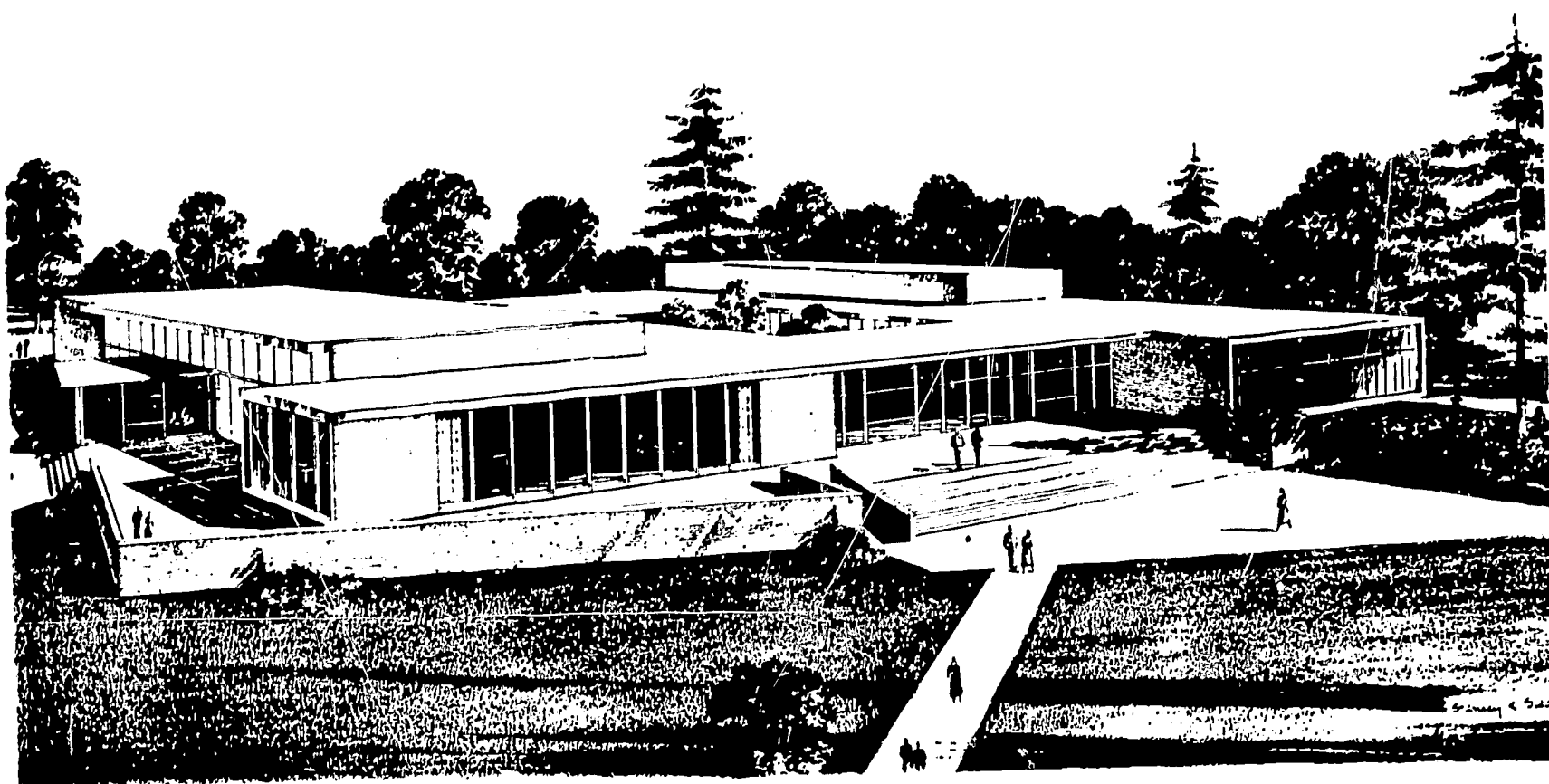
#### BEGINNING STEPS

Long before there was any possibility of obtaining the necessary funds for the new site and buildings, the staff and administration of Everett junior college began working hard on the study and analysis of the type of campus site and buildings which they felt their kind of institution would need. President J. F. Marvin Buechel, who was head of the institution at that time, deserves much credit for his insistence that the buildings should be designed and planned to house the program needed by the local community, and for leading all of the staff toward sharing enthusiastically in their projection. President Giles, his successor, continued to work on the basis of these principles, emphasizing the need for all to recognize the purposes of the community-junior college before even tentative plans were drawn. Superintendent Charles McGlade and the Everett school board assisted the planning in every possible way.



Junior college and building consultants were invited to confer with the Everett leadership early to aid the staff in identifying the needs of the community and in supplying technical counsel on matters relating to the site-size and over-all program and building planning. From the office of the state superintendent of public instruction, the state director of junior colleges (then Dr. D. Grant Morrison) came to the college to discuss the state office regulations, legal procedures to be accomplished, and similar matters. By special contract with the school of education of the State College of Washington, the consultant for junior colleges (then Dr. S. V. Martorana) was brought in to work with the staff on a continuing basis for two school years to plan staff organization, to project program planning, and to help faculty committees in special areas such as library and laboratory.

This proved to be of considerable advantage in acquainting the state officials and the community in general with the high priority of need and in organizing the staff to interpret the building needs to the public. It gave specificity to the planning and made it possible for the local school administration to secure an estimate of the amount of state assistance that would be available for particular types of buildings and in understanding of the types of items that were ineligible for state-matching funds. For example, from this preliminary study came the working acceptable minimum standard of space needed per student for building a complete junior college plant; the standard determined was 140 square feet per student.



Architect's rendering of the Campus Center, Everett Junior College, Everett, Washington

### CITIZENS ADVISORY AND FACULTY COMMITTEE ORGANIZED

The selection of the new site for the college was an important decision and part of the planning. In this critical decision the role of the college's citizens advisory committee was influential and helpful. The committee helped actively in surveying possible sites. The members of the committee held several sessions with the architect to gain technical advice on the advantages and disadvantages of building a new campus on sites that were under consideration. After much study, the committee met with the board of education and presented its recommendations.

With the co-operation of the superintendent of schools, the president of the college, and the outside consultants, faculty committees were established to work on each of the parts of the building program. Wherever there was to be joint use of a facility by staff members from several departmental areas, the representation of the committee included all of the staff members concerned.

Herein lies much of the answer to the success of the program at Everett junior college. The staff groups approached the opportunity to express their professional creative imaginations for the new buildings with the zeal of real artists and pioneers. No limits were envisioned or asked for in their quest for information and research efforts. They worked tremendously hard to create "our dreams of a good community-junior college" --not just a replica on an Everett site of a good two-year college developed somewhere else. As a result, they can truthfully and proudly point to the decisions listed at the end of this article as their decisions, the products of their minds and energetic efforts.

The architect for the building project was hired and asked to provide technical advice on how the building could be most economically, functionally, and attractively designed to provide the services needed. This arrangement proved to be especially valuable in helping the staff committees see their concepts translated into sketches that illustrated the merits and weaknesses of their ideas and to visualize the unitary nature of a college campus development project. Frequently, the architect attended the staff meetings at which were discussed the educational and psychological arguments advanced by the working committees to support their recommendations.

### WORKING GUIDE LINES

From the foregoing committee working structure and the discussions surrounding their presentations to the total staff, there emerged a number of guide lines or principles that were followed by each of the

working groups. These were not expressed in formal or written terms, but nonetheless were influential in setting the "ground rules" whereby the work of building planning progressed.

1. Faculty. Your major contribution will be in drawing up the educational specifications for your part of the building. Keep questioning and explaining until agreement and understanding are reached.

Be realistic in your space requests, indicating clearly how you plan to use the space requested. Take time to evaluate your needs in lighting, storage, amount of space, kind of space, orientation within the building and relationships to other programs.

The building is not designed primarily for you. You come third; first the student, then the program, then you.

2. Administration. The administration has the responsibility for providing the leadership in planning. To be most effective, it is essential that you establish a friendly climate in which discussion can be held freely.

You have a responsibility for bringing together the architects, the educational and building consultants, the faculty, the lay and professional committees, and the students to consider the problems attendant to building planning, and for indicating to each of these several groups a meeting of minds and decisions that will result in a co-ordinated and realistic campus development plan. You will not be doing a satisfactory job if you allow the faculty to design the building, the lay committee to decide the program to be carried out, or the architect merely to draw out from his folio building plans that were satisfactory under other conditions.

You have the final decision to make after all of the discussions are completed. It is essential, therefore, that all groups and individuals understand the limitations within which they must work and the priorities which are going to be used in the final decisions. In no other way can a satisfactory and harmonious solution be reached.

3. Architects become involved in all phases of planning to understand thoroughly the general as well as specific purposes of the institution, the educational relationships of the several parts of its program, and the types of space needed for each program. Expect to spend considerable time with faculty, administration, outside consultants, professional and lay committees listening, interpreting, and advising.

Be assured that within monetary limitations you will be given the greatest possible freedom in how the building will be constructed. Your originality and initiative are encouraged as you are expected



to provide an attractive and functional building.

Check constantly to see that there is mutual understanding. Use mock-ups and visual aids, such as scale models and sketches, to assist in showing how the proposed units will look and function.

Check existing plant with staff and administration to discover the flow design of traffic and the relationship of programs, one to another.

While the final decision will be made by the board of trustees and its administration, your attitudes and activities can do much to provide harmony, understanding, and ultimate satisfaction with the results of the building program.

4. Students. This building is being planned for you and those who will be in your places in years to come. You have a special contribution to make in terms of helping to plan student personnel services and the facilities needed to house these services. Give willingly and generously of your time in working with the committees and speak your ideas freely to insure that the best possible buildings will be constructed.

5. Lay Citizens Committees. You are in position to know the educational needs of this community much better than anyone else. Individually, you can list the requirements in terms of the junior college courses and programs for yourself, your children, and your neighbor's children. As a group you can help evaluate not only what is needed but the proportionate amounts as well. What should be the scope of offerings in the area of arts and sciences leading to transfer to upper-division study in other colleges and universities? What should be the scope of offerings in the area of organized occupational fields leading to employment after junior college? What emphasis should be placed on community service programs and adult education? What types of offerings should this emphasis produce? What programs can the junior college offer to assist in training the future leaders of industry and government in this community, the heads of the families of a new generation, the citizens of tomorrow's society? What is the total over-all picture of post-high-school educational needs?

Be careful to check your opinions and beliefs against the facts available from labor, management, occupation surveys, and school officials. If the facts are not yet available, assist in gathering them, working closely with persons versed in statistical and informational procedures to see that the information gathered is in reliable and usable form.

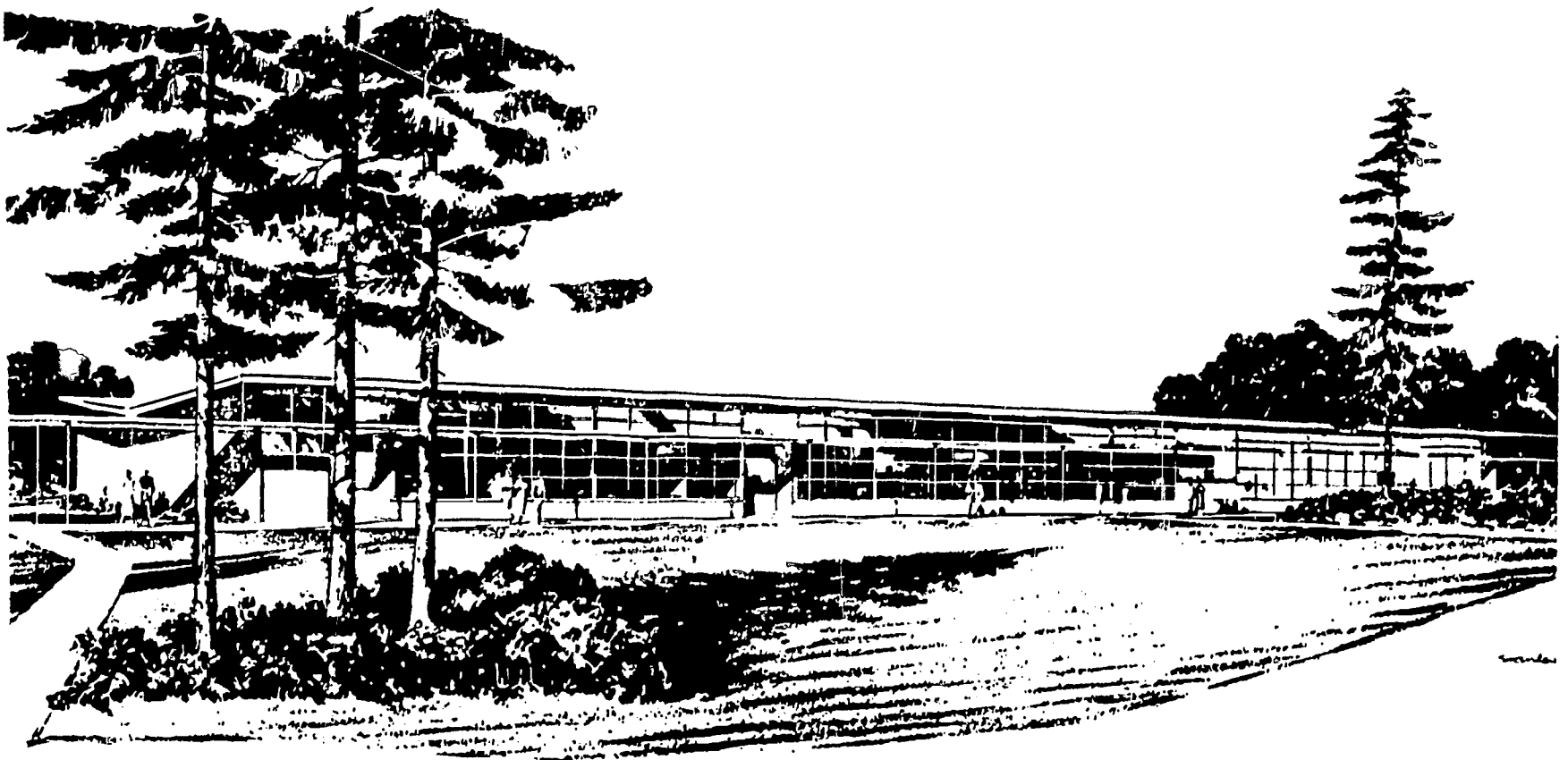


or constructional planning. You can be of great value in the planning of this building if you limit your contributions to those areas in which you are the best informed member of the planning committees.

#### GENERAL PROCEDURES

In resolving decisions and developing the preliminary plans for the buildings, the following sequence of operations was used:

1. Agreement was reached that a certain program should be included in the services offered by the college. Lay and professional committees, students, faculty, and administration had an opportunity to discuss this matter and to make recommendations.
2. A faculty committee prepared a list of questions which it wished to have answered in relation to the housing of this program. Sometimes there were 40 or more questions raised involving the type of activity, the number of students, the hour at which the program was to be offered, the relationship to other programs, and other similar considerations.
3. These were discussed with the architect and the administration so that all concerned would appreciate the scope of the program and the problems involved in housing it.



Architect's rendering of the Vocational Buildings, Everett Junior College, Everett, Washington

4. The architect would make several tentative sketches which he would later present to the group, indicating to them the advantages and disadvantages of each, their relative cost, the elements of inflexibility in each, and the problems of a technical nature which he saw in terms of light, heat, and ventilation.
5. The architect would prepare a scale model of the space recommended, including in it models of all of the furniture expected to be used.
6. These results would be compared with an existing classroom so that there could be an accurate understanding of the amount of space and the flow-pattern of traffic. Frequently this resulted in discarding the tentative plan or changing it appreciably.
7. After several of these units had been completed, a meeting would be held to see the relation of units -- one to the other, the possible location in an over-all plan, and the type of structure that would be most suited to the site and to the community.
8. Considerable emphasis would be placed on flexibility within and without the building, and expansion units would be inserted wherever a growing program indicated the need. For example, a second laboratory would be designed where only one was immediately needed. The space would be temporarily used for some other purpose, but the utilities would all be "roughed in."
9. Careful attention would also be given to such inflexible items as bearing walls, plumbing, corridors, and stairs.
10. Preliminary drawings would be made and scale models prepared, showing the entire campus plan for immediate and future construction.
11. These plans and models would then be discussed again with the building specialists in the state office to receive their suggestions and evaluations.
12. Any suggestions adopted would be included in the plans and the scale models would be modified accordingly.
13. After each of these steps, the plans would be referred back to the recommending committees. The board of education and its administration would make the final decisions and instruct the architect to prepare the final plans.

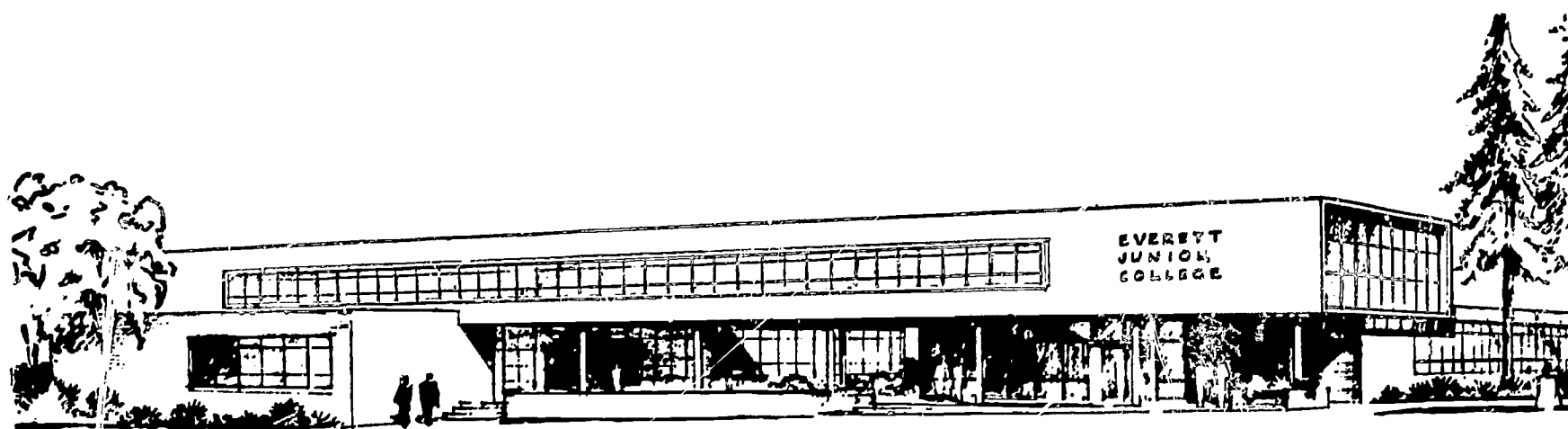
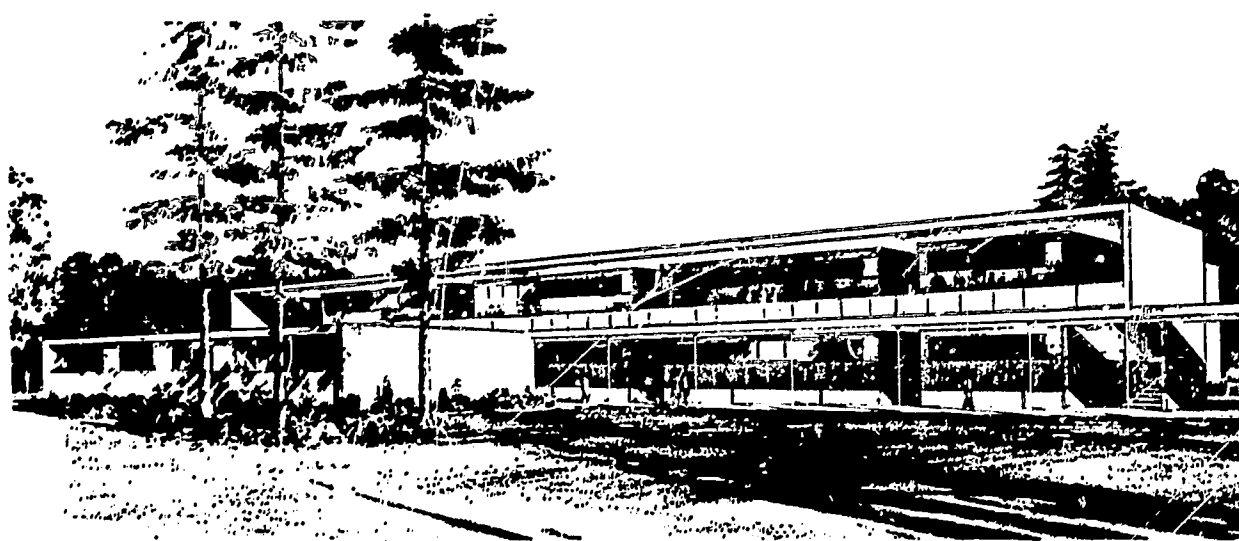
The procedure described above required over seven years to complete. It required hundreds of hours of conference, outstanding leadership by the administration, the greatest skill of the architect, and utilized to the utmost all of the assistance of building consultants and

lay and professional committees.

#### DECISIONS REACHED AT EVERETT

If any one decision reached at Everett were to be singled out for special advocacy to other community colleges, it would be the one centering on the word "flexibility." It, itself, was the first and foremost decision reached: that the campus arrangements and buildings must be adaptable to meet changing community needs. This concept of flexibility then entered into and influenced all of the other decisions made. These can be listed as follows:

1. Flexibility will be given first priority in decisions relating to design and structure. This includes both flexibility in the total campus arrangement and flexibility within buildings.
2. The buildings will, in general, be of free span construction with only the outside walls bearing, thus providing maximum flexibility.
3. The corridors will be located on the outside of the buildings whenever possible to allow for freedom of expansion within the buildings and the roofs extended to provide covered walkways.
4. For the most part the lavatories and locker facilities will be separate from the buildings (for the same reason as applies above to corridors), but easily accessible to several buildings.
5. Expansion units will be planned within the building. In one case this will be an additional laboratory, complete except for furnishings, and used temporarily as a drafting room. In another case it will be classroom space, subdivided temporarily to provide additional faculty offices.
6. Odd-shaped and specialized rooms will be kept to an absolute minimum, because basic rooms are more adaptable to change and expansion.
7. Classrooms will vary in size, but most will be designed for 25 to 35 students, with a few large enough for classes of 40 to 50. Lecture rooms in the science building will be designed to accommodate two laboratory sections (approximately 50 students) at one time.
8. The completed campus will be arranged with classroom buildings radiating in concentric semicircles from the student center building--each of these semicircles on a lower level than the preceding one. This arrangement allows for future expansion without losing the original campus relationships.



Science Building and the Central Administration and Classroom Building, Everett Junior College, Everett, Washington

9. A priority list will be established for construction: all units immediately necessary will have the top rating, and the remaining units will be rated in accordance with the urgency of their need. Building arrangement will be such that ample space will be left between buildings for future additions to the campus.

10. All out-of-class facilities (library, student lounge, bookstore, cafeteria, etc.) will be located together at the hub of the campus for greatest convenience and efficiency.

11. In general, the buildings will be one story in height, of a type of architecture to blend in with the rolling terrain of the site.

12. The science and administration-classroom buildings, however, will be two stories in height to get all departments in proper relationship in the first semicircle of buildings, to fit the contours of the site, and to leave room on the campus for future expansion.



13. There will be no car traffic between buildings on the campus, and all car entries and parking areas will be on one side of the campus. Parking areas for students will be located close to the campus center building and those for faculty and business cars near the administration-classroom building.

14. Landscaping of the campus will be planned in conjunction with the need of forestry and botany programs so as to be useful as well as decorative.

15. No stadium will be planned on this site, as an excellent civic stadium is available. A physical education plant will be included and arrangements made to utilize the adjoining tennis courts and the 18-hole golf course.

16. There is no immediate need for a large auditorium as the civic auditorium is available for any large audience.

17. Because the stadium and auditorium will not be on the campus, the 40-acre minimum for junior college sites can be pared down to 25 acres, especially since the golf course adjoining the campus adds spaciousness and prevents encroachment of other structures.

#### RESULTS: A CURRENT SUMMARY

Present construction calls for seven buildings on slightly more than sixteen acres for main campus building adjoining ten acres for physical education. The buildings in the total project under construction are: administration-classroom, science, campus center, two vocational and technical, heating plant, receiving and storage building, and a physical education plant. Facilities planned but not constructed are: a classroom building; a music-speech-arts building, which will include an auditorium; and a swimming pool. The buildings under construction are approximately 138,000 square feet in gross footage. The present construction costs are \$1,945,575, including tax and architect's fees. This contract includes grading and leveling of site, sidewalks, all parking areas, black topping, campus lighting, fire hydrants, yard drainage and sewer, as well as drapes and blackout drapes and similar fixed equipment on interiors. The cost per square foot is \$14.11.

-----

REPRINTED BY PERMISSION OF AMERICAN SCHOOL BOARD JOURNAL

# SPACE ADEQUACY PROCEDURE FOR CREATIVE COLLEGE PLANNING

Highlights of a Report  
LOWELL F. BARKER,  
CHARLES BURSCH,  
ROY A. KNAPP, and  
H.L. GOGERTY

The Antelope Valley Junior College opened as a new division of the Antelope Valley Joint Union High School District in September, 1929 with 23 students enrolled during the year. The junior college classes were held on the campus of the Antelope Valley Joint Union High School, Lancaster, California, sharing classrooms with the high school. During the summer of 1956 a temporary campus was established on a 30-acre site adjacent to the high school campus.

The boundaries of the District extend from San Bernardino County on the east to Ventura County on the west. It is bounded on the south by the San Gabriel Mountains. On the north the district extends into Kern County. This is an area of approximately 2453 square miles, or about 47% of Los Angeles County, and a portion of East Kern County. The Antelope Valley Joint Union High School District, of which the Antelope Valley College is a part, is made up of 12 separate elementary districts, each with its own Board of Trustees and its own individual schools. The district is almost three times as large an area as the Los Angeles City High School District.

## ENROLLMENT POTENTIALS

The drawing area of Antelope Valley College, in addition to the large high school district, includes certain adjacent districts which do not maintain junior colleges. The size of the district, increasing population, and the communities to be served by the Antelope Valley College brought the decision to master plan the college site for an ultimate enrollment of 2500. For possible enrollment beyond this total, an additional site located elsewhere in the district would need to be acquired and buildings planned.

The combination of increasing population, and its resulting effect upon elementary school enrollments within the district caused the Board

of Trustees and District Superintendent to make plans for rapid expansion of the school plant. H. L. Gogerty Associates, already rendering architectural and consulting services to the district in expanding high school facilities, were selected and authorized by the Board of Trustees to proceed with planning the Antelope Valley College.

A 1956 report by Dr. Edward H. La Franchi, member of the Melbo Survey Team from the University of Southern California, suggested that a site of more than 100 acres be purchased and developed in light of new trends in junior college education and the evidence of increased enrollments of college students in the Antelope Valley. In view of this recommendation, a 110-acre site west of Lancaster was purchased by the District.

#### PROGRAM SUGGESTS PLANT PLANNING

Prior to the preliminary conferences held with the college representatives, the need for a sound approach to the provision of adequate space with a high utilization became obvious. In June, 1957, the department chairmen and teachers met with representatives of the architectural firm to determine the facilities needed to serve an estimated 2500 college students. As a result of these meetings a program was developed which attempted to predict the needed courses of study, the number of classrooms and other facilities, and the relationship of facilities to each other on the new site, from which a master site plan could be developed by the architect. Because the college was small and the ratio of men to women students differed from that normally found on other college campuses, it became very difficult to estimate future building needs. Additional meetings were held with representatives of the college to refine the projected program of building needs for the college. A space adequacy study was prepared in order to more accurately establish the number and types of facilities needed.

#### SPACE ADEQUACY SURVEY

Although space adequacy studies are commonly in use for high school purposes, no such accurate tool for determining the space needed at the college level was available. Enrollment data were collected. Courses of study, numbers and types of classrooms and other facilities, with their percentage of utilization, were secured from Ventura, Mt. San Antonio, and Allen Hancock Colleges. This information was then used as a basis for comparison to more accurately predict the facilities needed for the eventual 2500 students at Antelope Valley College.

The use of the college space adequacy survey procedure as an inte-

gral part of the planning of a new campus for the Antelope Valley Junior College was a rewarding experience for all participants. When the procedure was completed the School District was convinced that it had an accurate and defensible determination of their predicted building needs. The architect had secured what he desired - a firm, well authenticated and documented statement of need for instructional spaces for the college, both for the near future and for the maximum policy enrollment established for this campus. The Bureau of School Planning, California State Department of Education, obtained reassurance of the value of the procedure to college planning, and obtained for its files comprehensive data on several colleges that could be useful to other colleges in their planning programs. These improvements are the direct result of the team approach and should prove to be of infinite value in the creative planning for junior colleges.

### SURVEY CHARACTERISTICS

The college space adequacy survey procedure has the following characteristics which commend its use in college planning:

1. It projects teaching space needs upon the basis of an approved ongoing educational program or upon such a program with carefully considered staff and administrative adopted modifications.
2. Data are organized so that variations in teaching space needs for various sized enrollments can be computed easily for any enrollment projection. This is accomplished by using one-student-in-one-classroom-one-hour as the unit of need for teaching space.
3. It provides for staff conference assistance in determining instances where one room can be designed and arranged to care adequately for several small enrollment subject fields.
4. It controls situations where an expected increase in emphasis upon any subject justifies an extra allotment of space. This control is accomplished by requiring that space, equivalent to the extra allotment be subtracted from other subjects.
5. It takes account of the fact that even with good scheduling practice, a room cannot be used 100% of the college day. A lecture room is considered fully loaded when it is used 80% of the time; a laboratory, when used 70% of the time.
6. It allows for the use of differentials in average class size among different types of courses, different methods of teaching, different sized colleges, and colleges with differing financial ability.

The space adequacy survey procedure consists of processing college class schedule data through several forms. Form A shows the name



of each course taught by each instructor, class size, hour taught and the number of times per week it meets. From these data are derived the student hours-per-week for each subject taught by each instructor. In Form B, the student hour data from Form A are grouped in terms of courses taught and of departments responsible for groups of courses. Form C provides comparative data on department and course emphasis from other college programs. The data is transferred to Form D where it is processed to determine the number of teaching rooms needed for the on-going educational program and then by applying the appropriate factor, for any specified enrollment increase. After these computations are made, a check is made on the workability of the number of teaching stations found. This check consists of conferences with administration and staff and the determination recorded in Column 8 of Form D. This number, less the adequate teaching spaces now available, shows what is needed now to house adequately the instructional program of the college.

#### METHODOLOGY ILLUSTRATED

The following data briefly illustrates the procedure as it is computed for one department only. For the sake of brevity and understanding of the progression, Forms A and B have been consolidated on one sheet as have been Forms C and D. Data of the on-going Business Department program is shown on Form A and the student hours per week have been determined. Form B indicates the grouping of the subject of the department and shows the current percentage emphasis to the entire college. This percentage is compared on Form C with the Business Department percentage of other colleges. By a change in the percent and the recomputation of student hours-per-week, the Antelope Valley College staff reflects what they anticipate the desired percentage should be as the enrollment increases. A changed percentage emphasis in this or any other department must of course be offset by percentage revisions elsewhere. Finally, Form D indicates the computed teaching space needs of the Business Department for a predicted college enrollment of 2500 pupils. This computation was adjusted by conference (Column 8) and shows the final department teaching space needs. Since the existing facilities are all on a temporary site, the total number required was incorporated in the master plan.

#### RESULTS THAT COUNT

Use of the Space Adequacy Procedure on this project has resulted in a total teaching space need for fifty-eight stations as compared to an originally estimated need of seventy-seven. The obvious savings in area, buildings, staff and money are tremendous. It should be pointed out that a Space Adequacy recheck of the college will be

made annually as a verification of the original projection. This information is an aid not only in project planning and expansion but also for purposes of scheduling, curriculum and staff requirements.

It is anticipated that the construction of this college and the budgeting of funds will involve separate building contracts over a three year period. Therefore, it was desirable to do Form D computations for projected enrollments of 1000 and 1500 as well. This information serves as a guide in determining the scope and budget for each increment. This assures a well rounded curriculum during expansion, is an asset to master planning and aids the district in anticipating bond sales and expenditures for budgetary purposes. This information is portrayed briefly in an Enrollment and Area Chart which follows the Space Adequacy forms. Complete budget and contract data in minute detail was also prepared and presented as a guide for the governing board.

The governing board of the district, the administrative staff and the college staff have realized the merits of the space adequacy approach. It appears to satisfy educational demands, results in high space utilization and a saving of building areas or facilities and a consequent saving of building funds. It also aids in the adaptation of a building program to increments of construction and facilitates the district's program for financing buildings in terms of availability and timing of bond sales.

**Page 60**

**Form A: Student-Hour Enrollment**

**Form B: Summary Sheet By Departments**

**Page 61**

**Form C: Percentage Comparisons, Junior College Programs**

**Form D: Teaching Space Needs**

**Page 62**

**Enrollment and Area Chart**

**Page 63**

**Proposed Master Plan, Antelope Valley College, Lancaster,  
California**

Form A - Space Adequacy Survey  
College

Antelope Valley College

Business Department

Student-Hour Enrollment

(Use at least one line for each Instructor  
Separate Line for Lab Courses  
Separate Sheet for each Department)

December 13, 1957 Date

Prepared by H. L. Gogerty

1 Instructor (Name)	2 Course (Name)	3 Enrollments by hour & days per week							4 Total Enrol. Col. 3	5 Number Classes	6 Average Size (4 + 5)	7 Student Hours Week **
		1 8:00	2 9:00	3 10:00	4 11:00	5 12:00	6 1:00	7 2:00				
Chapman	Accounting Bookkeeping Intro. to Business	17-3 16-2	17-3 16-2	21-3	14-5				34	2	17	102
Fernandez	Beginning Typing Advanced Typing	10-5	17-5			7-5			32	2	16	64
Ogden	Shorthand Business Machines				16-5 18-3				21	1	21	63
Kelly	Commercial Law								14	1	14	70
									10	1	10	50
									7	1	7	35
									17	1	17	85
									16	1	16	80
									18	1	18	54
Total Hour Enrollments		43	50	21	14	34	7		169	11	15	603

(These totals should be transferred to Form B)

\* Number of days class meets per week  
shown after dash line.

\*\* Enrollment for class multiplied by  
number of hours class meets per week.

Form B - Space Adequacy Survey

Summary Sheet By Depts.

Antelope Valley College

December 13, 1957 Date

Prepared by H. L. Gogerty

I. 7291  
Grand Total Student Hours per Week-Col. 7, Form A

1 Department: Course	2 Enrollment by Departments (Column 3, Form A)									3 Student Hrs. per Week	4 % Col. 3 is of Item 1	5 Col. 4 Percent- ages - adjusted by conference	6 Computed Student Hours per Week (Col. 5 x Item 1)
	1 8:00	2 9:00	3 10:00	4 11:00	5 12:00	6 1:00	7 2:00	8 3:00	9 4:00				
Acct., Bkpg.	33	33								166	2.3	2.6	190
Typing, Shorthd.	10	17		14						240	3.3	3.7	270
Of. Trng. (Mach)					16					80	1.1	1.4	102
Law, Math., etc.			21		18					117	1.6	1.7	124
Distrib. Educ., Marketing										-	-	1.5	109
	43	50	21	14	34	7				603	8.3	10.9	795

Form C - Space Adequacy Survey

PERCENTAGE COMPARISONS - JUNIOR COLLEGE PROGRAMS

Junior College	Mt. San Antonio	Ventura	Allan Hancock	Antelope Valley
Student Hrs. per Week	39,962	23,394	2,491	7,291
Acct., Bkpg.	Actual 1.1	Actual 2.0	Actual 2.6	Actual 2.3
Typing, Shorthd.	3.4	5.3	3.7	3.3
Of. Trng. (Mach).	.8	2.6	1.7	1.1
Law, Math., etc.	4.3	.9	1.9	1.6
Distrib. Educ., Marketing.	1.8	.2	1.1	-
	11.4	11.0	14.1	8.3
			11.0	10.9

Form D - Space Adequacy Survey  
College

January 14, 1958 Date

Prepared by H. L. Gogerty

Teaching Space Needs

Antelope Valley College 1965 (date)

- Predicted Enrollment\* 2500
- Present Enrollment\* 500
- Predicted Increase 2000
- Working Factor (Line 1 + Line 2) 5
- Hours Available/wk. for Scheduling\*\* 35

1	2	3	4	5	6	7	8	9	10
Department: Course	Computed Student Hrs. per Wk. Col. 6, Form B	Average Class Size (College Policy)	Class Groups per week Col. 2 + Col. 3	Class Groups per week for Predicted En. Col. 4 x Item 4	% Space Utilization (College Policy)	Computed Teaching Space Needs: Col. 5 x (Item 5 x Col. 6)	Teaching Space Needs Adjusted by Conference	Adequate Teaching Spaces Available	Additional Teaching Spaces Required
Acct., Bkpg.	190	30	6.3	31.5	70	1.3	1	0	1
Typing, Shorthd.	270	36	7.5	37.5	70	1.5	2	0	2
Of. Trng. (Mach)	102	24	4.3	21.5	70	.9	1	0	1
Law, Math., etc.	124	30	4.1	20.5	80	.7	1	0	1
Distrib. Educ., Marketing	109	20	5.5	27.5	80	1.0	1	0	1
	795					5.4	6	0	6

\* Day Students taking 12 or more units  
\*\* Clock hours from start to finish of scheduling day - less 1

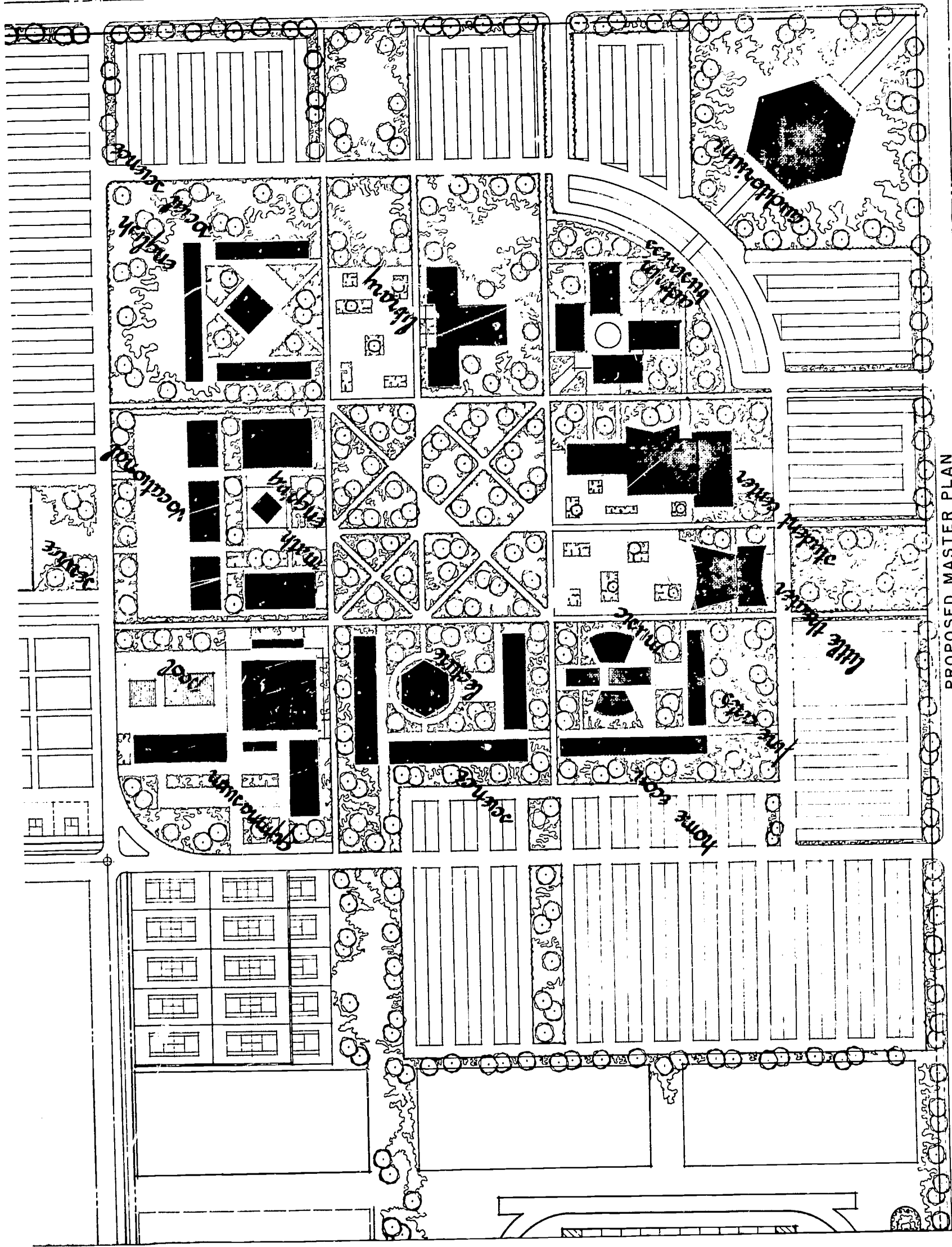


# ENROLLMENT & AREA CHART

The enrollment and area data is derived from Form D of the Space Adequacy Survey. Computations on Form D were prepared for enrollment stages of 1000, 1500 and 2500 and serve as a guide in the determination of construction increments, progressive needs and budget calculations.

Department	1000	1500	2500	
English	8,430	-	-	8,430
The Arts, Home Ec., Language, Music	-	16,300	2,120	18,420
Business	7,820	-	-	7,820
Mathematics & Engineering	-	-	11,910	11,910
Social Science	-	-	8,530	8,530
Science	20,200	-	6,670	26,870
Technical-Vocational	7,900	8,100	-	16,000
College Administration & Voc. Nursing	12,710	1,550	2,150	16,410
Library	16,400	-	-	16,400
Student Center	20,670	-	-	20,670
Physical Education	7,200	22,200	-	29,400
Department Administration, Mech., Arcades, etc.	13,570	11,170	7,880	32,620
Little Theater	-	11,500	-	11,500
Auditorium	-	-	20,000	20,000
Pool	-	-	12,850	12,850
Warehouse, Maintenance Bldg., etc.	1,000	3,136	6,864	11,000
Area per Increment	115,900	73,956	78,974	
TOTAL AREA	115,900	189,856	268,830	
Area per Student - Total	115.9	126.6	107.5	

Construction of this college is proposed over a three year period and consequently it is feasible to construct complete buildings under each contractual increment insofar as possible. Therefore, specialized facilities are planned initially and instruction in the fields of mathematics, engineering, and social science will be temporarily conducted in facilities of other departments.



H. LOGGERTY ASSOCIATES  
ARCHITECTS  
LOS ANGELES  
CALIFORNIA

PROPOSED MASTER PLAN

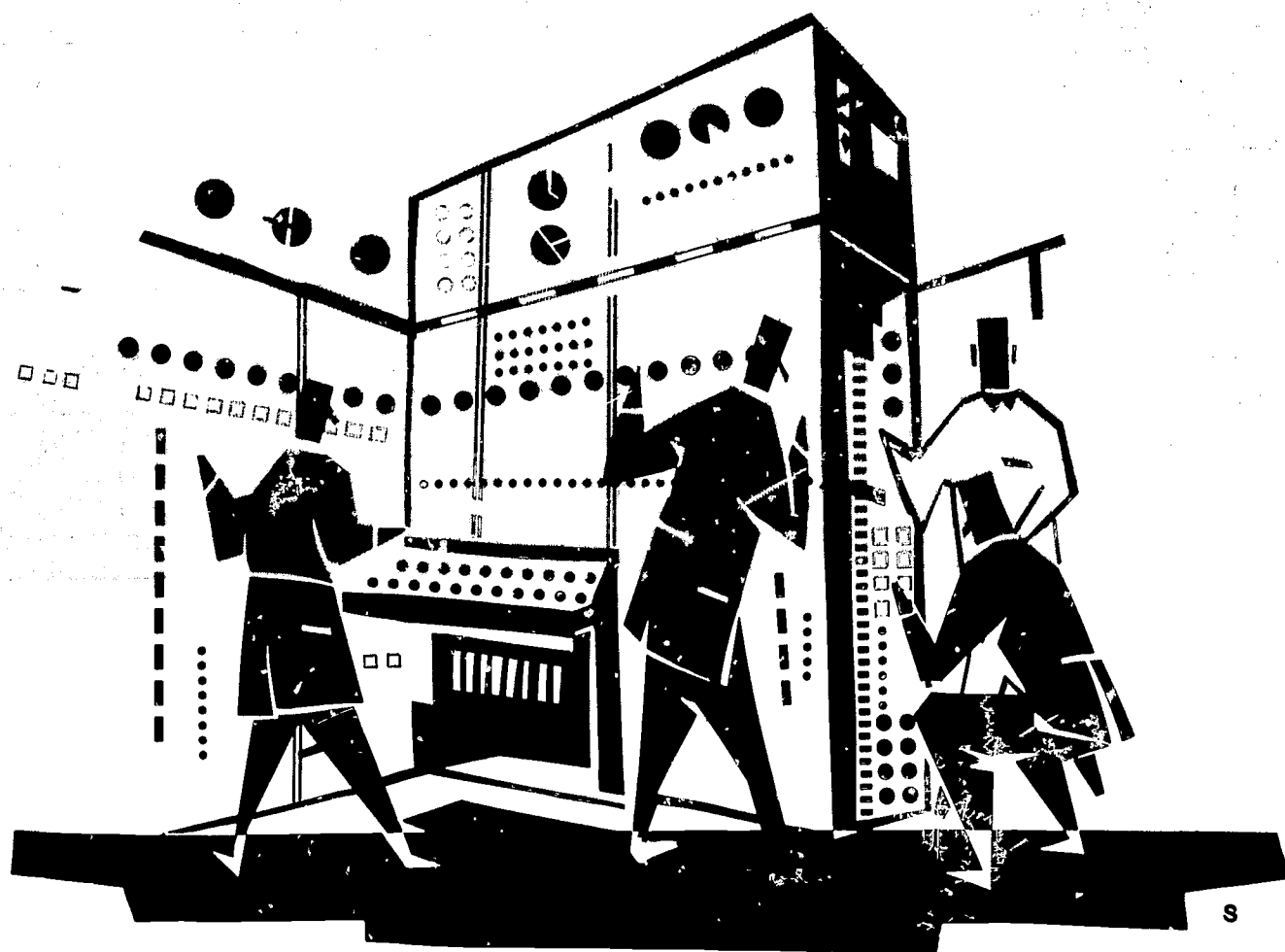


ANTELOPE VALLEY COLLEGE  
LANCASTER  
CALIFORNIA

# NEW DIMENSIONS

in APPLICATION

3



# CREATIVE PLANNING: THE STUDENT CENTER

Highlights of a Panel Discussion  
MARIO CIAMPI,  
FREDERICK C. HUBER, and  
RAYMOND C. SCHNEIDER

The junior college is an institution which offers the first two years of higher education, a two year vocational or semi-professional terminal program, adult education, and general education. Because of these diverse offerings an effective student activity program is very important. This program must not be regarded as extra-curricular; it should be considered as a functional part of the total education a student will receive while attending junior college.

Just as the library is the center of instruction, the student center serves as the focal point of student activities. The program centered in this facility satisfies many of the objectives for general education stated by B. Lamar Johnson. The junior colleges want to develop a citizen who is a contributing member of his family and the community. The college may meet many of these objectives outside the classroom, particularly in the program conducted in the student center.

What will be the function of the student center? Is it going to be strictly a student center? Are the members of the faculty going to be excluded from the facility? Many believe that this facility should be a campus center rather than a student center. These persons believe that the faculty and the students together make up the junior college, the campus center being the place where they can associate. Others view the unit as a community center. They believe that the facilities should be used by the students during the day, but that during the evening the facilities should be opened to the people of the community.

## OBJECTIVES

The objectives of the junior college come from the values of society. Out of these objectives come the purposes, and from the purposes, the functions. Once these functions are stated, space allocations may



be determined. All too often needs are only superficially considered. Even when they are seriously considered, misunderstandings may develop between the educator and the architect. Typically the educator lists the items that he wishes in a building, possibly even on the back of an envelope, and expects the architect to formulate his program on this basis. The educator frequently fails to recognize that there may be a lack of understanding between professionals in two different fields. Guidance is required which will enable the architect and the educator to define their terms and eliminate misunderstandings in a manner that will provide a well planned facility.

#### FACTORS TO CONSIDER

Among the factors which must be considered are the activities that will take place in the student center, relationships between units on the campus, traffic patterns, equipment, utilities storage, and special requirements.

The use to which the building will be put must be decided. Will there be dancing? Are food preparation areas desired? Are lounging areas wanted? These activities receive careful attention in the preparation of educational specifications.

The relationships between the required spaces must be determined. What are the primary relationships? What are the secondary relationships? What is the relationship of this unit to other units on the campus? What are the relationships of the various internal elements to each other?

Traffic may be divided into the following: service traffic, including delivery of goods and supplies to the campus; on-campus traffic, for maintenance and operation of buildings and grounds; and pedestrian traffic, generated by students and visitors. Keeping all these types of traffic separated is a complex problem.

After the various activities have been studied, the functions of each of these spaces, including the cafeteria, dining room, kitchen, student lounge, and faculty lounge, must be identified. In selecting the furniture and equipment for the center, flexibility must be maintained which will make possible adaptation to technological advances. For example, ten to fifteen square feet formerly were needed for a room air conditioner; now less than two feet are required.

The types of utilities needed in these areas must be defined. Certain facilities, such as hot water or steam, are required in the food preparation area that may not be needed in the dining room. The space allocations should be made in a manner that will minimize expenditures for plumbing and electrical conduit.

Other problems must also be considered. How much storage space is required in the student store? This will depend on the size of the inventory carried. What special lighting is desired? It may be desirable to have the lights in such a control that they may be dimmed for dances. The planners must consider special floor surfaces, time and signal systems, fire control, communication systems, and sun control devices.

The School Planning Laboratory of Stanford University has been assisting school officials and architects in the preparation of educational specifications that will insure economy, effectiveness, and aesthetic appeal in the facilities built.

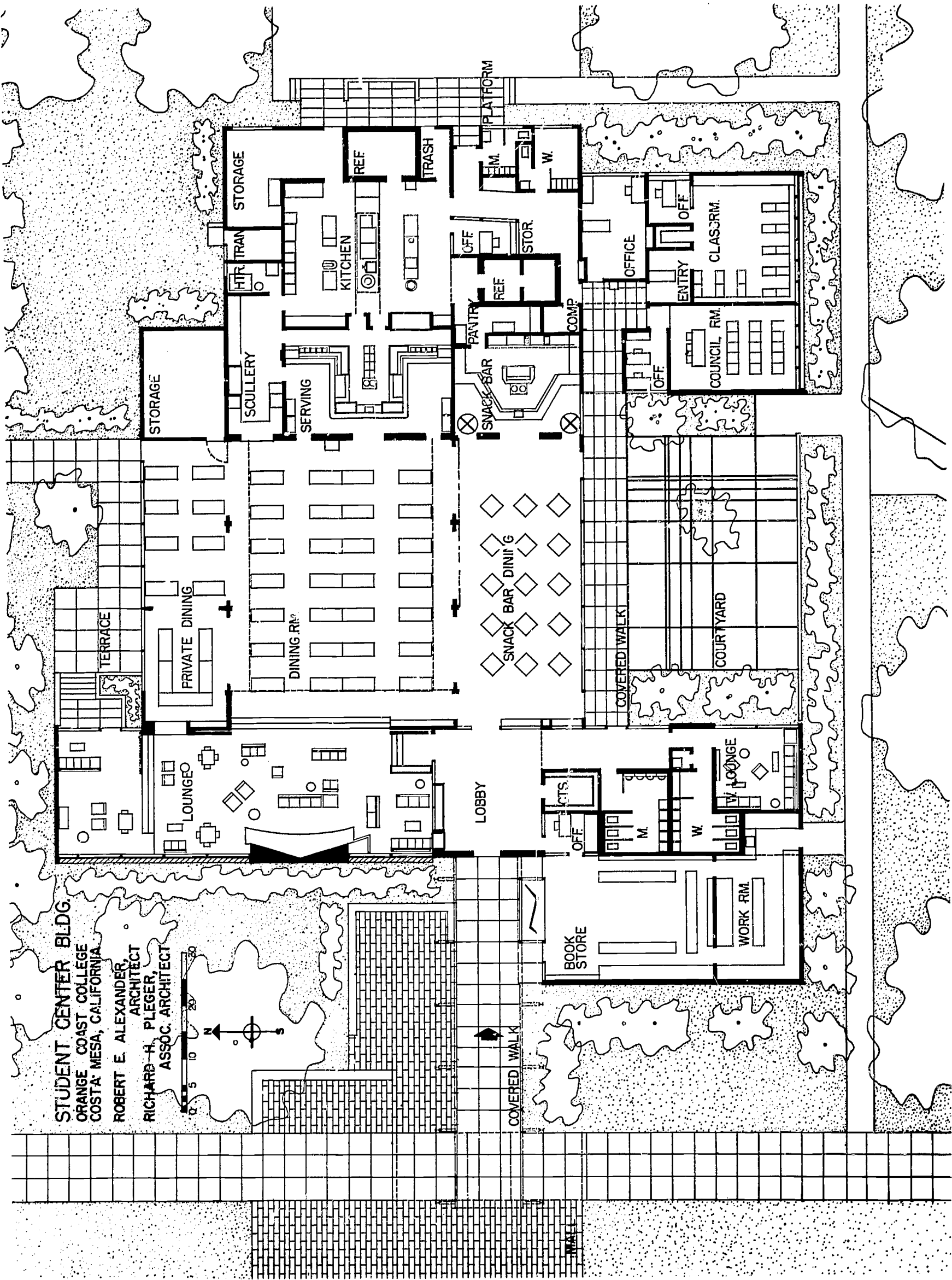
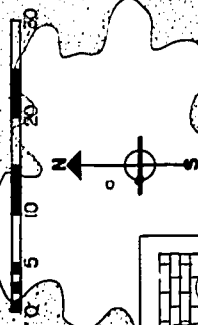
### ROLE OF THE ARCHITECT

Although the technical and professional aspects of the business of architecture are important, they are subordinate to a greater concern. The architect must be able to use the tools and techniques of



Campus Center, Bakersfield College, Bakersfield, California. Patio features terrazzo floor

STUDENT CENTER BLDG.  
ORANGE COAST COLLEGE  
COSTA MESA, CALIFORNIA  
ROBERT E. ALEXANDER,  
ARCHITECT  
RICHARD H. PLEGER,  
ASSOC. ARCHITECT





his profession, understand the economics of the problems that he faces, and comprehend the framework within which he works. However, the most significant consideration of an architect is not technical in nature, but rather is a human concern--a human approach to the problem he is trying to solve. Architects attempt to provide adequate housing contributing a kind of environment that will facilitate a special experience for a certain group of people. In order to best create this type of environment, the architect must have the experiences that will make it possible for him to know something about those who will use the facilities that are being created.

The buildings may be built of reinforced concrete, steel or wood. A single large building may be built, or the facilities may be dispersed in many elements. Many persons believe that the resultant product represents little more than the fancy or whim of the architect--that he has merely satisfied his own vanity. However, the architect is challenged by the responsibility of making the facilities a total statement of the objectives and desires of many groups; he "stands or falls" by what he has created. Often something emerges that is quite unique or different. Such a result by a sincere architect would not be prompted by a desire to be conspicuous or sensational, but rather to stimulate the minds of the people who will occupy the building.

The horizon is unlimited in the architect's approach to the problem of planning the student center. He will view human beings objectively analyzing their behavior while asking himself many questions. How can he contribute to the happiness of the people who will use the building? How can he place them in an environment that will excite them--that will stimulate them? How can he make them think, "Gee, this is a real place to come to!" The architect is searching for qualities in buildings that will prompt thoughts such as these.

Attention should also be given to the psychological and sociological aspects of education. If people are left to their own devices, what attracts them to certain areas of interest? What propels them? What gives integration, solidarity and unity to society? Probably no one person has the answers to all of these questions. If those who are planning the student center are exposed to these considerations, they may reorient their viewpoints. They may become less technical about some things. Whether the student center has fifty or thirty foot candles of light isn't very important. A human being is capable of adapting to a great range of experiences.

One of the authors had a very heartening experience recently while planning a new junior college. The President of the proposed junior college asked him to visit a couple of junior colleges. The architect responded, "Do you believe that this is worthwhile? I don't think that they are very significant buildings."



"I'm not interested in the buildings," the President replied. "I want you to observe the behavior of the students. Let's just wander around and see that they do. I want you to know how the students behave on campus--."

These two gentlemen strolled through the campus. They found two or three students gathered here and there in the corridors talking. They found another off by himself, sitting on a handrail. They tested the handrail as a resting place and found it to be very uncomfortable --but it was the only place the students could sit. There were no seats, exclusive of those in classrooms, on the entire campus.

The architect and the college president found another group of students crowded around the student store--a kind of a slot in the corridor where the students stated their business in a hurry and moved on so they could make room for the next person in line. Students are not attracted to this junior college by its environment.

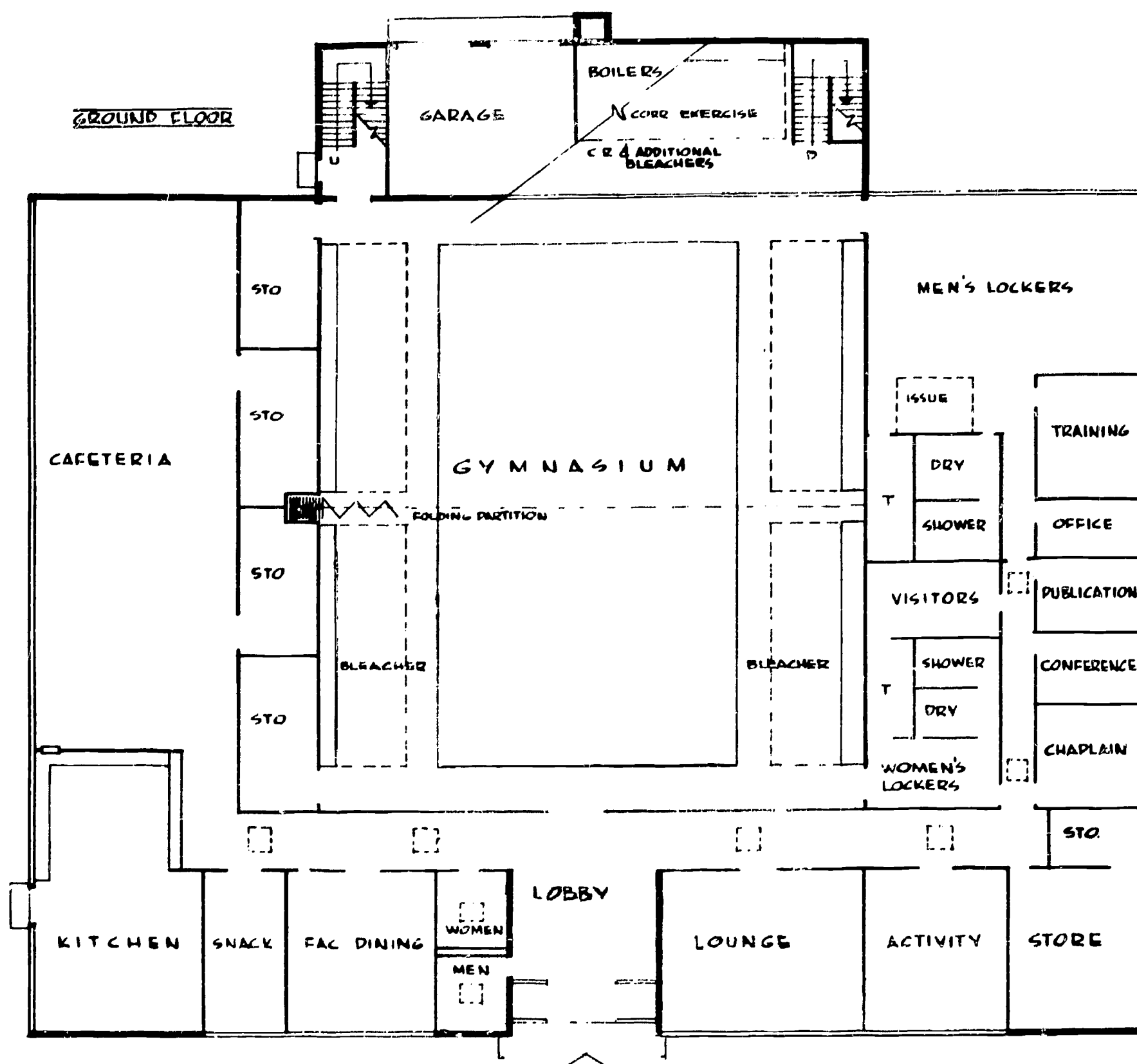
Surroundings that make the students feel relaxed and enthusiastic will facilitate the learning of academic subjects. Realization of this has added stature to the student center in the educational program. The student center is not a place to go to escape; it is where the students continue their educational experiences.

Many important decisions are difficult to make in an academic and formal situation. Decisions are more easily made in a relaxed atmosphere. It is interesting to contemplate how many decisions are made over a cup of coffee while relaxing after a "bull session." The student center can supply this kind of atmosphere.

In planning a student center consideration should be given to the student, his outlook, his basic concerns, and his relationship with other people. These can be related to the whole educational concept and the educational concerns of the community. The composite resulting should be reflected in the facilities that are constructed. These ideas may be translated in terms of the specifications and the directions that are given the architect so that he may provide the proper kind of space that will do the job required.

Several methods have been used to relate these ideas to the architect. One method is to write a set of educational specifications. This certainly has been much better than letting the architect do the whole thing. Some of the communication that is needed between the educator and the educational planner can't be expressed in words. This has to be an experience -- a human and emotional experience, and an interpretation of these.

What should the student center be? Some educators believe the students should look to their homes for recreation. Others believe that



Floor plan for the Student Union of the Hudson Valley Technical Institute, Troy, New York

a gym and tennis courts are sufficient. Some feel that the student center should be a cultural area that is closely related to the library. Although the library is a wonderful experience, it is not necessarily gay and lighthearted. The traditional European universities couldn't afford student centers. However, many of these have little cafes located adjacent to the campus where the students may sit, view the fine old buildings, and observe the people walking up and down the streets while they reflect upon their studies. This is where they really solve their problems. This is accomplished because there is an atmosphere; there is an environment; something is motivating them. Therefore, the environment is not simply a juke box or a coke machine.

The rapidly expanding enrollments of our schools add to the complexity of building community colleges. Often a college is built for an enrollment of one thousand and a few years later facilities must be added for an additional five hundred or one thousand. In most instances where expansion is required the campus is desecrated and butchered by adding facilities indiscriminately -- without any logic or regard for the happiness of the individuals that will occupy them. Plans for expansion of the facilities should be made at the time that the facilities are first built. In this manner the additions could serve to enhance the existing facilities.

The objectives of the junior college determine what facilities will be included in a junior college student activity program. In accordance with these, various factors such as traffic patterns, desired relationships between units, and utilities must be considered. In addition to the technical knowledge of his field, the architect must "know" the people who will use the needed facilities. He must interpret this knowledge to provide structures that will contribute to the attainment of the objectives of the junior college.

-----

## CREATIVE PLANNING: ADMINISTRATION AND STUDENT PERSONNEL

Highlights of a Panel Discussion  
JAMES FESSENDEN,  
CALVIN C. FLINT,  
ROBERT LINDSEY, and  
STANLEY SMITH

Although the example presented herein concerns a small junior college, the authors do not agree with the fetish that a community college should limit its enrollment to fifteen hundred students. At the present time this number is exceeded by many junior colleges in the State of California, and the trend is toward even larger enrollments.

Many types of administrative units exist in California junior colleges. In areas where the junior college operates as a part of a secondary school district or as part of a unified district, the superintendent's office, the business offices, and other district facilities would probably be located differently than they would be in a separate junior college district. The arrangement would also be altered materially by the number of campuses anticipated, especially in new

junior college areas. If there will eventually be several campuses, a decision must be made whether the administrative unit will be separate from the other buildings on the original campus or be moved to completely different quarters upon completion of the second campus.

In considering the basic essentials of a small junior college, provision must be made for housing the instruction division and student personnel services. At Monterey Peninsula College, Monterey, California, these administrative services were housed in temporary quarters for nine years. During this time, the counselors and administrators were in quarters throughout the campus. This period of time provided opportunity to know the needs peculiar to the student body, the administrative and counseling staffs, and the faculty that might be used in planning central facilities.

Elaborate administrative offices are neither necessary nor desired by most administrative staffs. However, there is a need for a distinct counseling unit. At Monterey, since practically every student took English and some Social Science course, the buildings housing these classes were located on opposite sides of the campus. The Counseling and Records Building was located in the center of the campus. The result was that students pass this building on almost an hourly basis. The attractiveness of this structure is enhanced by a lobby through which the students may pass in going from class to class. In developing this unit the counseling phase rather than the administrative was emphasized. In fact, consideration was given to leaving the administrative unit in temporary facilities. The new structure is called the Counseling and Records Building; this is accepted by the public because they realize that counseling is a very important part of the total educational program.

The student personnel services portion of the building includes the offices of the dean of students, and the dean of women, the counseling offices, staff lounge, a scoring machine room and a testing room. Glass is used extensively, enabling one clerk to serve the counseling group, work in the machine scoring room, attend the information counter, and control the testing room. The registrar and records are located adjacent to the counseling offices. This registrar's office is equipped with a vault with capacity for filing cabinets in which ninety-six thousand sets of records can be stored.

Adequate office space for each counselor is necessary, keeping in mind that a storage cabinet, a filing cabinet, book cases, a desk, a chair for the counselor, and two or three chairs for counselees are minimum essentials. The facilities for each counselor at Monterey require approximately eighty square feet of floor space. The administrative portion of the Monterey building includes offices



for the president, administrative assistant, and dean of instruction and a conference room. A particularly economical feature is a lobby that is common to the administrative and counseling portions of the building.

Some junior colleges organize a completely separate evening division. In a few instances it is located on a campus of its own. Monterey regards the evening division as a part of the regular program of the college. A major problem is operating the evening division with fewer clerks than the day session requires. To solve this problem, the office of the dean of the evening division is located near the counseling portion of the building rather than with the administrative group. Here he has access to the records and control over secretarial help.

The example described above is being successfully used in Monterey, California. There is every reason to believe that with slight modifications this facility could also serve the needs of much larger junior colleges.

#### FUNCTIONS, ACCOMMODATIONS, AND RELATIONSHIPS

The realization of a successful building project requires the combined effort of many minds. The problems to be solved in the planning of building projects are commonly expressed by means of a written program of requirements. This program actually covers three distinct aspects: first, the educational functions for which the institution exists; secondly, the accommodations necessary to house these functions; and, thirdly, the relationships between the functions and accommodations. These functions, accommodations and relationships apply not only to the whole complex of the building but also to each element within it.

The program is the statement of the problem and the design is an expression of how this problem has been solved. A program can be stated best in at least two and possibly three stages. Two stages would be necessary for such an element as the administrative and student personnel suite. One is the general objectives and the second specific objectives. The first would include a list of rooms or spaces necessary and the relationships thereof, and the second would be explanation of uses of each room or space and how the accommodations in it should be developed to meet the functional requirements. The development of this statement is really a mutual effort of the administrator, his staff and the board of education. Often, an educational consultant is the screening liaison agent. He receives, develops and analyzes the information expressed by the district officers, and assists the architect in the interpretation of this statement as a means of arriving at design. Naturally, in the development of the

information, involvement of the people who will use the facilities is desirable. Since there is the possibility of having diverse and conflicting opinions expressed, it is important to have someone with authority in the district who will make decisions which reconcile these conflicting objectives.

The junior college being a relatively new educational phenomenon, there are varying views among the various colleges as to what the administrative and student personnel suite should encompass. The first thing necessary in moving toward the planning of a unit is a very thorough study of the aggregate functions to be housed. This could best be expressed with an organization chart listing all of the functions that are to be carried out in each element and how one impinges on and works with another. The next document which must be prepared is an outline of each distinct function. This could simply be a list of the various areas with a short indication of what goes on in them. In addition to actual activities carried on by people, it is necessary to have a list of functional areas that do not have distinct personnel involved in them, such as the reception spaces, the lounge rooms and circulation. From this general outline of functions to be accommodated, an outline of the accommodations necessary to house them can be developed. At this point decisions on combining functions need to be made. The reception area can serve as an illustration. It must be decided whether public and student reception shall be combined or separated. This requires planning before drawings are made, as these are things that can be considered abstractly, perhaps even better than they can be viewed on a drawing. Once interested parties see the concept as a drawing they are affected by the prejudice and preciseness inherent in a visual picture of their planning. After preparing the functional outline, a plan is developed in writing which will give due consideration to the various relationships existing among all spaces to be utilized. This can be done by describing in a few phrases those spaces which should be intimately related to one another, generally related, or remotely removed from each other. After this is done, decisions can be made concerning sound and visual isolation, and physical distinctiveness among various spaces.

Almost all of the above steps must be applied to each distinct space to be developed. In the office, for example, planning must take into consideration the function and the space necessary for each, whether a separate desk or a single conference table is desired, communications facilities wanted with other offices, book shelves and storage spaces, audio visual requirements as well as other accommodations that each space needs. Following such procedures is a means for assuring that nothing has been forgotten and everything is in its proper location when the building is ready for occupancy.

# CREATIVE PLANNING: FINE ARTS

## Highlights of a Panel Discussion

DANIEL BUSHNELL,  
MARIO CIAMPI,  
JACK DANIELS,  
ROSS DENNISTON, and  
JOHN C. WARNECKE

Siegfried Gideon, the eminent architectural historian, has written two books, Space, Time and Architecture and Mechanization Takes Command, in which he made an incisive analysis of the individual of today. He writes that man has become completely unbalanced; he has been carried away by mechanization, by rationalization, and by all the things that have to do with thinking and problem solving, to the exclusion of feeling. Gideon is concerned with the restoration of balance, with bringing back equilibrium of thinking and feeling to man.

In considering education in terms of restoring balance, arts and other values related to the development of desirable human qualities can be affected by the educational center. This becomes so significant that it needs to be given special consideration and related to education wherever possible in order to restore the balance desired. The restoration of balance depends on the concerns of education, and the ability of the architect to relate these concerns with the qualities needed. The application of this to the art center of the school must be in terms of what the environment will be and what the impact of this visual experience will be on the student who attends this school. When the student moves from the science building to the art center, he should immediately perceive that this is a new experience, with qualities that stimulate his emotions and arouse his feelings. When the architecture reflects this and the student feels it, the environment is appropriate for learning and for an appreciation of fine arts. This is the challenge the architect has to face. He must face it not only in the real and tangible development of the facilities, but also in terms of taking the time to talk to educators, school board members and citizens about restoring these qualities. This is a very serious challenge with which architects are confronted.

This is the real implication of fine arts education in the junior college. The architect feels this very keenly because he is placed in a world where he deals with thinking and feeling. He also must consider

the economic aspects, structural concerns, and public relations. He has a very serious role to play; he is a great cultural leader who must bring before people these concerns and these qualities because the average person is not exposed to them as much as the architect.

Today, whether a man is an architect, a painter, a sculptor, or a musician, he has a responsibility to society. Society relies on him to orient and to advise. The artist is the antenna of society, reflecting in his own way what is going on in the world.

Only through emotions can creativity occur at high levels, bringing to people an understanding of what is taking place in the world. The architect, in order to do this job properly, must relate himself with the fine arts while still recognizing the technical aspects of his profession.

When education is considered from this point of view, the importance of fine arts in the educational system becomes apparent. The idea of developing this kind of environment in the educational system means more

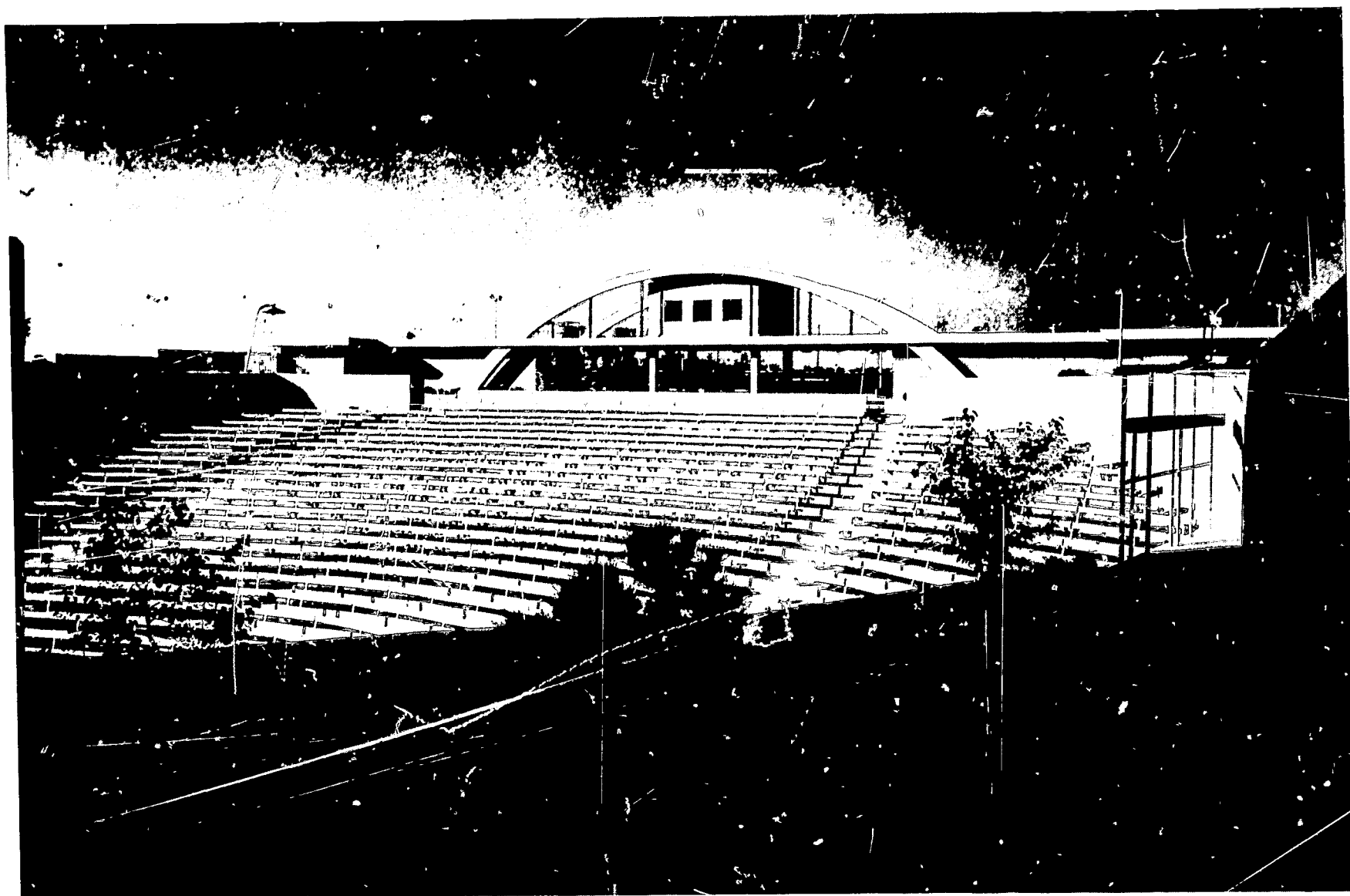


Creative Arts Building, American River Junior College, Sacramento, California. Structure includes 474 capacity little theatre as well as classrooms



than just building facilities. The creation of an atmosphere for the appreciation of fine arts begins in the art building, but it needs to permeate throughout the campus. When these ideas, these philosophies, and these concerns are reflected in various experiences throughout the entire campus, then the real opportunity for learning these values that are so vital may be recognized.

The curriculum in the community junior college is dictated by the needs of communities, which vary greatly throughout the state. At the present time there is a growing demand and interest in the fine and applied arts curriculum. As many as eighteen different courses are offered for the student interested in fine arts. These include commercial art designed for the student who wishes to go into magazine illustration, commercial art work in general, book illustration, all forms of lettering and bill-board design, decorative arts, ceramics, and many applied arts courses. Photography classes train students in the physical, creative, and scientific aspects of this field.



Interior view of the Outdoor Theatre, Bakersfield College, Bakersfield, California. Facility provides seating for 2,000

The goals of the student, naturally, must be carefully considered. Many art, music, drama, and photography students transfer to a university or state college upon completion of their work. Most of these become educators or teachers. A large number transfer to art schools and specialized schools. The remainder are enrolled primarily for cultural improvement.

Flexibility of construction facilitates the operation of this kind of an art program, which requires a center with general classrooms and loft space. Large classrooms and a specialized library would be desirable. In addition, general classrooms and a lecture room or two need to be included. A well lighted room could be used one year as a study room for a silk-screening program and the following year could be converted into a life drawing studio. The large center room could be available for general uses, those that require an empty loft space with movable equipment. Around this center room could be the specialized rooms arranged either in separate buildings or as wings of a larger building.

Sometimes room interiors are over designed for the various constructive and creative arts. Perhaps if a person were given a comfortable place to work, well lighted with a minimum of distraction and only the most necessary tools, he might be encouraged to create and more completely project himself into his work.

The art building would require a specialized room for photography, since a dark room cannot easily be converted for other uses. Separate rooms should be set aside for the teaching of crafts because specialized equipment is needed. The band requires a large room with adequate insulation so the sound does not disturb others in the building. A large room is also needed for choral work. A few small, easily accessible, practice rooms are desirable. The music people would not be utilizing the center room as much as others because of their need for insulated areas. The theatre and speech arts area could use the center as an auditorium or little theatre, where much of the activity of the speech arts classes would take place. Set designing courses could be taught in the loft area. Other specialized spaces in the theatre area may be used as studios for television and radio.

This, briefly, is the approach to the general architectural treatment of an arts center. In considering it, it is necessary to keep in mind its relationship with the rest of the campus. The encouragement of contact between students who are majoring in this area of education with other people on the campus is desirable. Perhaps someday architects will contribute to the establishment of closer relationships.

# VERSATILE FACILITIES FOR TECHNOLOGY

WILLIAM F. KIMES, and  
ROBERT E. ALEXANDER

The basic principles of planning used for other types of instructional areas may also be utilized for a technology building. However, it must be emphasized that the more complicated and involved a building is, the greater the need for careful educational planning. Recognizing this, it is common practice to work out an agenda for directing the educational planning for each building. Presented here are the procedures followed at Orange Coast College to solve their building problems.

The philosophy of education at Orange Coast College is based upon the premise that it is a community-centered institution. Consequently, the college offers the best of academic opportunities in areas of general education as well as vocational or trade training for students who wish to complete their education in two years. Approximately one-half of the regularly enrolled students pursue the terminal program. Several thousand adults make use of the college facilities, particularly in the fields of technology, as a means of improving their vocational skills. The stated purpose of Orange Coast College is to teach all of the people of the community all they wish to know, or are qualified to learn, in all the areas in which there are opportunities for employment or for further education in institutions of higher education.

## OCCUPATIONAL SURVEY

To determine the areas of employment for which this community college should train students, a careful and intensive study was made of the vocational and professional opportunities of the district before the college commenced instruction in 1948. Two re-surveys have been made since that time. The original survey indicated sufficient job opportunities within the district in building trades, engine mechanics, metal trades (including welding), petroleum technology, and mechanical drawing to warrant providing facilities for instruction in these areas. Re-surveys showed needs in the fields of

radio-television technology and electronics. Orange Coast conducted the courses for the first year in temporary army buildings, giving instructors the opportunity to carefully determine the needs for the permanent structures. These instructors found that teaching a course in an inadequate area served as a strong stimulus to carefully plan the permanent structures.

As planning progressed, the architect determined that the funds available for construction were sufficient for only half of the facilities desired. Each member of the faculty committee seemed to feel that it would take at least half of the available budget for his program alone. Unavoidably, philosophies of instruction must often be influenced by the amount of money available to provide housing for the several programs. At times administrative decisions were necessary to maintain realism in the face of divergent interests and objectives.

#### FACILITY PLANNING COMMITTEES

At Orange Coast facility planning committees have traditionally met under the leadership of the superintendent. Members of the Board of Trustees have always been invited to participate in the committee discussion. The District has been fortunate in having at least two members who have had the time and interest to serve on building committees. In addition to faculty members, a Board member, and the Assistant Superintendent in charge of Business, two students have been included on each building committee. While the students probably gained more than they gave, often the students have had real contributions to make.

Lay persons from the trade and vocational committees were not included on the building committees. The Orange Coast administrators felt that the instructor in the field, who was a member of the trade advisory committee, could adequately represent the trade in planning educational facilities.

For a facilities planning committee to be effective a plan or agenda for the meeting must be prepared by the administrative chairman. Sufficient time must be allotted for each meeting and, of no less importance, there must be sufficient time between meetings, so that the ideas of the committee may develop. At Orange Coast College the committee for the Technology Building was in session over a period of six months. The architect prepared no less than eight floor plan revisions during this period.

#### ADMINISTRATIVE LEADERSHIP

Administrative leadership, diplomacy and statesmanship are requir-



ed to promote the best work of a faculty committee without having the individual members feel that they are being "yes men" for the superintendent. It has long been recognized that a corporate mind is superior to the sum of the several individual minds. In short, the give and take of a group of competent and interested persons brings out ideas that no individual of the group is capable of creating.

The key person is the administrator to whom falls the responsibility of holding the overly enthusiastic faculty member to the budget and at the same time drawing out the best in the quiet and retiring member of the faculty. The administrator is the only one who can tell the faculty members what he can have. This is not the function of the architect. Even where the architect has been directed to a particular committee member to work out details, it is still the responsibility for the administrator to make the final decisions.

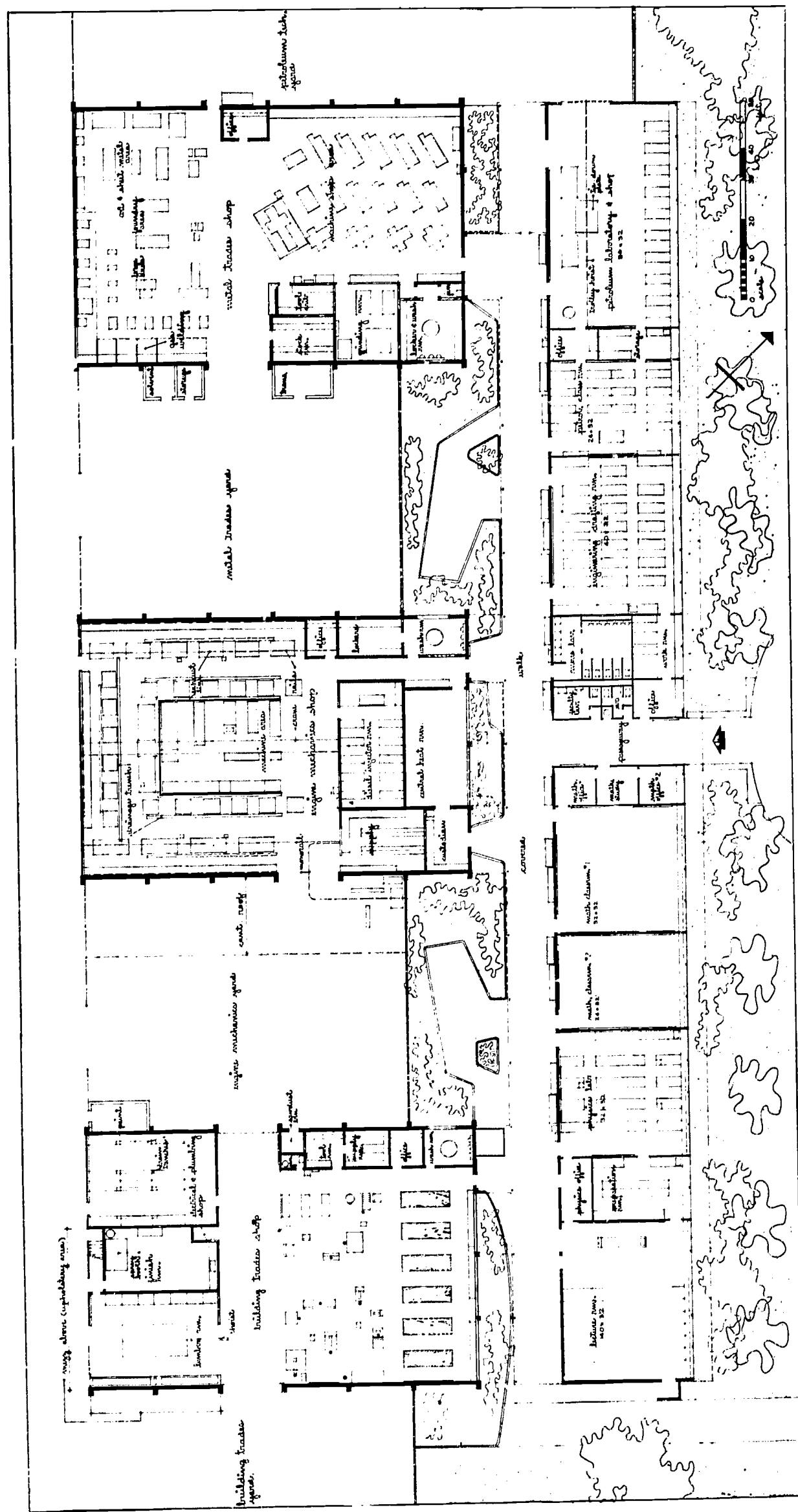
Finally, it should be remembered that faculty members, administrators, board members, and architects come and go but the taxpayer expects the building to be there a long time - a half century or more. It takes the highest kind of educational leadership to direct the planning of a functional, flexible, adequate building that is within the financial ability of the community. The buildings must implement the curriculums, not determine them. The faculty of Orange Coast feels that their Technology Building meets these principles to a reasonable degree.

#### **CURRICULUM DICTATES FACILITY PLANNING**

The field of technology covers a number of separate disciplines or trades. Those included in the curriculum of a particular junior college will depend upon the nature of the community in which the college is located--what a community survey reveals are the interests and needs of the area.

Orange Coast College decided to make its wood shop a building trades center, not a cabinet mill. If the college had been located in Grand Rapids, Michigan, the facility probably could have been best oriented toward the manufacture of furniture. Even though the college was located in a semi-rural area when the college was begun in 1947, it was quite obvious there would be great opportunities in the building trades. This stimulated plans to provide something that was quite different from the normal secondary school vocational program, in which basic carpentry, plumbing, and electric wiring is taught.

At Orange Coast College the classes were extended into the out-of-doors. This necessitated the provision of areas in which several



**Floor plan of the multi-unit Technology Building, Orange Coast College, Costa Mesa, California**

houses could be built. The first classes poured the foundations and succeeding classes layed the floor joists, framed and finished the homes. The students actually frame and tear down a half dozen houses during each semester. They also do a certain amount of plumbing and wiring. All of this requires a rather large portion of outdoor space. The nature of the activities further conditions the locations on the campus where these activities may be conducted. The buzz saws, hammers and other tools create a considerable amount of noise. The area must have easy access for trucking large pieces of machinery and bulky materials.

The woodshop portion of the building trades structure is one of the very few "clean" facilities existing. This was made possible by including a four foot crawl space below the wooden floor and using extensive blower equipment. Every machine that makes wood-chips, shavings, or sawdust is directly connected to a blower system which blows the waste out of the building. In addition, sawdust traps are located in the floor. The sawdust is carried from these receptacles into a closet located near the outside wall which facilitates disposal.

The main accent in the engine mechanics area is on diesel engines, farm machinery, and marine engines. The latter is important because the college is very close to the largest small boat harbor in California. The shop in which marine engine technology courses are taught is equipped with a universal traveling crane capable of lifting three-ton marine engines. This building includes an exhaust system which makes possible operating an engine inside and exhausting outside the building. A water pipe is located next to the exhaust connections for water cooling these motors.

The petroleum technology program at Orange Coast College concentrates on field work, exploration, and geology, preparing qualified persons for the oilfields in nearby Huntington Beach. By agreement between Orange Coast and Los Angeles Harbor College the latter offers a petroleum technology program oriented toward the type of laboratory work conducted in refineries.

In developing the facilities for the petroleum technology program the architects and the faculty sought examples of existing facilities which might be visited and studied. However, since there were no existing educational institutions which had a program of the size and type envisioned by the college authorities, the college relied upon the petroleum industry for ideas and information. A model oil well, another example of the extension of the teaching area into the out-of-doors, pumps oil from a storage tank to the well and then back to the tank. Completely equipped as a functional field unit, this facility provides a realistic field experience for students.

The type of facilities required to conduct a petroleum technology

program of this nature requires large expenditures for utility installations. Naturally, its cost will be much greater than that of ordinary classrooms.

### **FLEXIBILITY IS IMPORTANT**

Flexibility of three types was desired. The first of these is the kind of flexibility obtained when a curtain is pulled across a room, the kind of flexibility that certain instructors or administrators dream about in which a button is pushed and the whole aspect of the space changes. This immediate, short-term flexibility is seldom purchased without inconvenience and lack of neatness.

A longer term flexibility is that which may be attained between semesters, or possibly when a week or two are available to make the change. This is highly desirable if it can be obtained without interfering with the basic functions of the building.

The final type of flexibility is that which can be effected only once in twenty or thirty years. An example of this is the moving of brick walls that are not load-bearing.

The technology buildings at Orange Coast were designed for the middle range of flexibility. For example, the entire classroom-type space, including some laboratories, is three hundred twenty-five feet long. The entire structure is braced against earthquake and wind load by being supported across the intervening space to the long walls of the shop areas. Consequently, there is no need whatsoever for any interior bracing partitions. The entire building was built and completely finished except for the interior partitions. The fact that the building has a single ceiling and a single floor covering facilitates the moving of partitions.

When the building was first constructed television was in its infancy. After the demand for television technicians developed, it was possible, because of the flexibility of the building, to convert a large section of the structure into an electronics laboratory.

The utilities in the technology facilities extend around the perimeter of the building. By removing snap-off aluminum covers, all of the major plumbing and electrical piping is accessible to the laboratories.

After using the building for eight years, the staff of Orange Coast College is impressed with the flexibility that has been achieved. Twice it has been necessary to remove partitions when new areas of instruction were instituted. The present course in electronics was not in existence when the structure was planned, but by removing partitions excellent areas for instruction have been developed.



## SCIENCE: INSTRUCTIONAL TRENDS

PAUL DeH. HURD

One of the areas of greatest concern in our entire education scene today is that of the teaching of science. The eighty-fifth Congress considered one hundred twenty-seven bills designed to improve the teaching of science in our country by changing content and methods, designing improved facilities, and providing federal sums for facilities and equipment. The President of the United States is concerned about science education, fifty national committees are now working on science programs. In the meantime, answers are being sought for several problems that have been developing during the last few years.

The first is that students at all levels, including the college, be required to take more science courses. Since one of the major objectives of teaching science is to develop some appreciation in feeling for the scientific enterprise, most educators feel that the training given should be under a laboratory situation.

During the past few years college scientists have reviewed their teaching procedures. Several studies have been made concerning the teaching of physics in secondary schools. Professors at Massachusetts Institute of Technology have developed a course for high school physics. This will necessitate changes in the manner that physics is taught at the college level.

College physicists are aware of this. Most are concerned now that teaching of physics must include the area of modern physics, which means micro-physics instead of macro-physics, particle-physics instead of the physics of previous days. Many introductory principles of physics, such as the laws of levers, can be taught in the elementary

school. Probably more emphasis should be placed on Einsteinian physics at the high school and junior college level. Less emphasis can be placed upon Newtonian physics since there is not sufficient time to adequately cover both areas.

Radical changes in the equipment that will be required will result from the decisions that are made. Recently the American Association of Physics teachers surveyed ninety-three colleges and universities. Fifty per cent of these institutions indicated that they were not remodeling old laboratories or constructing new science facilities until the direction of curriculum change becomes more definite.

New recommendations for laboratory work stress that students should perform fewer experiments during the year but that those undertaken should have depth and quality requiring precision and understanding. The requirements for the laboratory reports should be such that the student has an opportunity to express himself. There is no room in science today for the "cook-book" type of procedure in which students go through a routine consisting of filling a few answers in a workbook.

Biologists, under the sponsorship of the National Research Council have met frequently to discuss what should be taught in biology courses. Biology is rapidly becoming a science of bio-physics and bio-chemistry. The teaching of biology by looking at specimen that have been dried, preserved, imbedded, and otherwise distorted, and then requiring the students to state that biology is the study of living things is a thing of the past.

There is also concern about how chemistry teaching can be improved. In many schools experiments in chemistry are simply mechanical exercises in working with equipment. Little educational value results if the chief criterion for selecting an experiment is whether or not the student can get out the equipment, set it up, finish the experiment, and put the equipment away before the next class arrives. Each exercise should be selected on its scientific and educational merits.

Tremendous shortages of qualified science teachers make it imperative that laboratories be designed which facilitate instruction. Many schools are using laboratory assistants, semi-technical people who work with teachers, in order to maximize the effectiveness of the instructor. The Ford Foundation has appropriated four and one-half million dollars for research concerning staff utilization in local school districts, colleges, and universities. Another purpose of this project is to collect what is known about laboratories and good design, applying the experiences gained in industrial laboratories to secondary and college science facilities.

## SCIENCE: EXPERIENCES OF INDUSTRY

### Highlights of a Panel Discussion

R. L. IGLEHART and L. E. MILLER

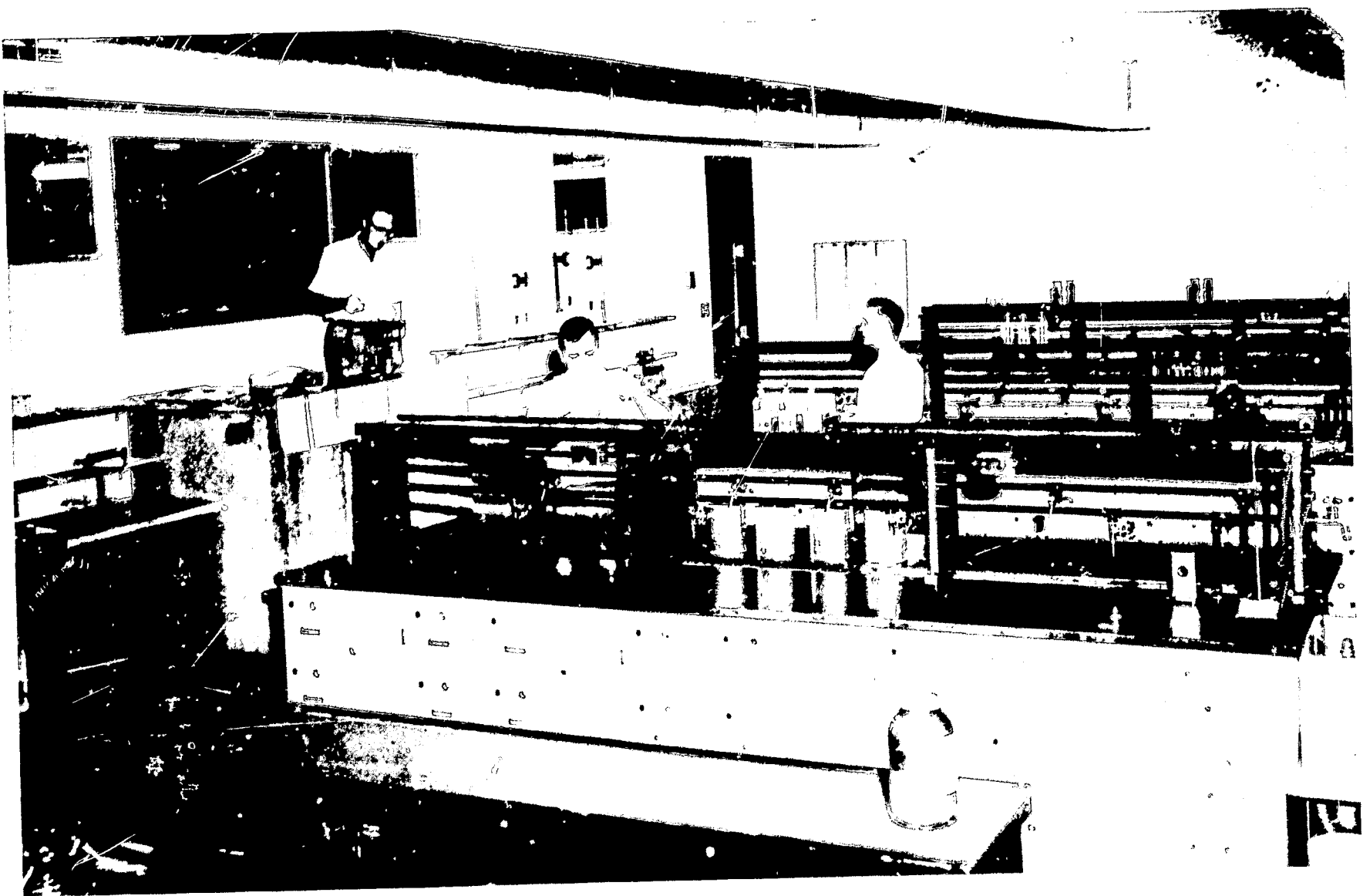
In the construction and operation of an industrial laboratory such as Shell Development's Laboratory at Emeryville, California, many problems are encountered that are common to those of the schools. Both must fight the budget. They must obtain more for their money as prices rise. The industry and the schools have met this challenge by developing new techniques.

In discussing changes in school facilities an interesting comparison would be to note changes that have taken place in the modern industrial research center. Today at Emeryville possibly nothing other than the exterior of the building looks like it did ten years ago. The bench idea has been eliminated in this facility. The experiments are set up on a permanent basis. Consequently, more and more equipment is being placed in a permanent position so that it can be used for a variety of experiments, holding the assembling and dismantling to a minimum.

The Shell Development Laboratory is completing a ten million dollar building program that includes approximately two hundred special laboratories. Many special techniques have been developed and used in this construction. Instead of the old service rack idea, piping mounted on uni-strut frames is being used. Modular laboratories and modular benches are being used to provide flexibility. Those responsible for the Shell Development Laboratory have found many ways to cut costs. To a large extent they have designed their own furniture with twice the use of manufactured furniture. They have been able to produce it about ten times as fast as they can buy from furniture manufacturers -- and at about two-thirds to three-fourths the cost of the latter.

For example, Shell has developed modular benches using a three foot module which can be modified. This can be changed from an open leg table to a complete cabinet or a half cabinet with half drawers using a few stock parts. Almost any laboratory assistant or technician can completely change the character of a bench in half an hour. In designing the service racks the Shell people have tried to use forms familiar to electrical and plumbing crafts. By using standard fittings they were able to mass produce some of the inclusions in their new building. For example, in the construction of a new five story building the twenty laboratories on each floor have been designed with almost identical services. This makes possible the mass production of all the piping for racks. As soon as the walls are up and the drain connections are completed, the piping is moved into place.

The Shell Development Laboratory, like many similar industrial concerns, has developed many special designs and other techniques which have not been fully utilized by school people. The Shell Oil Company will furnish most of these designs free of charge to educational institutions who wish to use them.



Interior view of the Science Building Laboratory, Victoria College, Victoria, Texas



# SCIENCE: FACILITY DESIGN

ROBERT E. ALEXANDER

Every Community College facility should be planned for the specific needs and program of the particular institution. The example presented here is the Science Building of Orange Coast College, which was planned with few preconceived notions. It is not intended to serve as a prototype to be duplicated without careful analysis and comparison with other possibilities.

Policy decisions were made by the Building Committee, headed by the President, and including the Science faculty and the Superintendent of buildings and grounds. Decisions were based on alternatives suggested by the architects after reviewing written program requirements and after visits to seven community colleges, three universities, and the office of the State Architect. The method of study and the planning procedures may be repeated with success.

## PHYSICAL SCIENCE FACILITIES

The principal adverse criticisms encountered in our survey of science facilities dealt with laboratory furniture. The central trough so common in chemistry tables is difficult to keep clean and water splashes out of it a distance of several feet. To prevent splashing, some faucets had been fitted with rubber tubes, making them even more difficult to use. The typical deep end sink in such installations provided the only suitable water supply for most purposes. It was always crowded, resulting in loss of time and glass breakage. Individual "cup sinks" were universally denounced as an abomination, even worse than the trough.

The design developed to overcome these objections has proved highly successful, although the instructor is not convinced it is "necessary." An eighteen inch deep tub is placed between each

pair of stations providing sufficient depth to fill or wash flasks or beakers. Extending the full depth of the table, it serves four students, each of whom has plenty of water within reach. Two students share a faucet and each has a separate aspiration, gas, and electric outlet. Compressed air and steam lines were omitted. When steam is available on campus generally, it is included at little cost. Warm air is desirable for glass drying, but care must be taken to keep it free from oil.

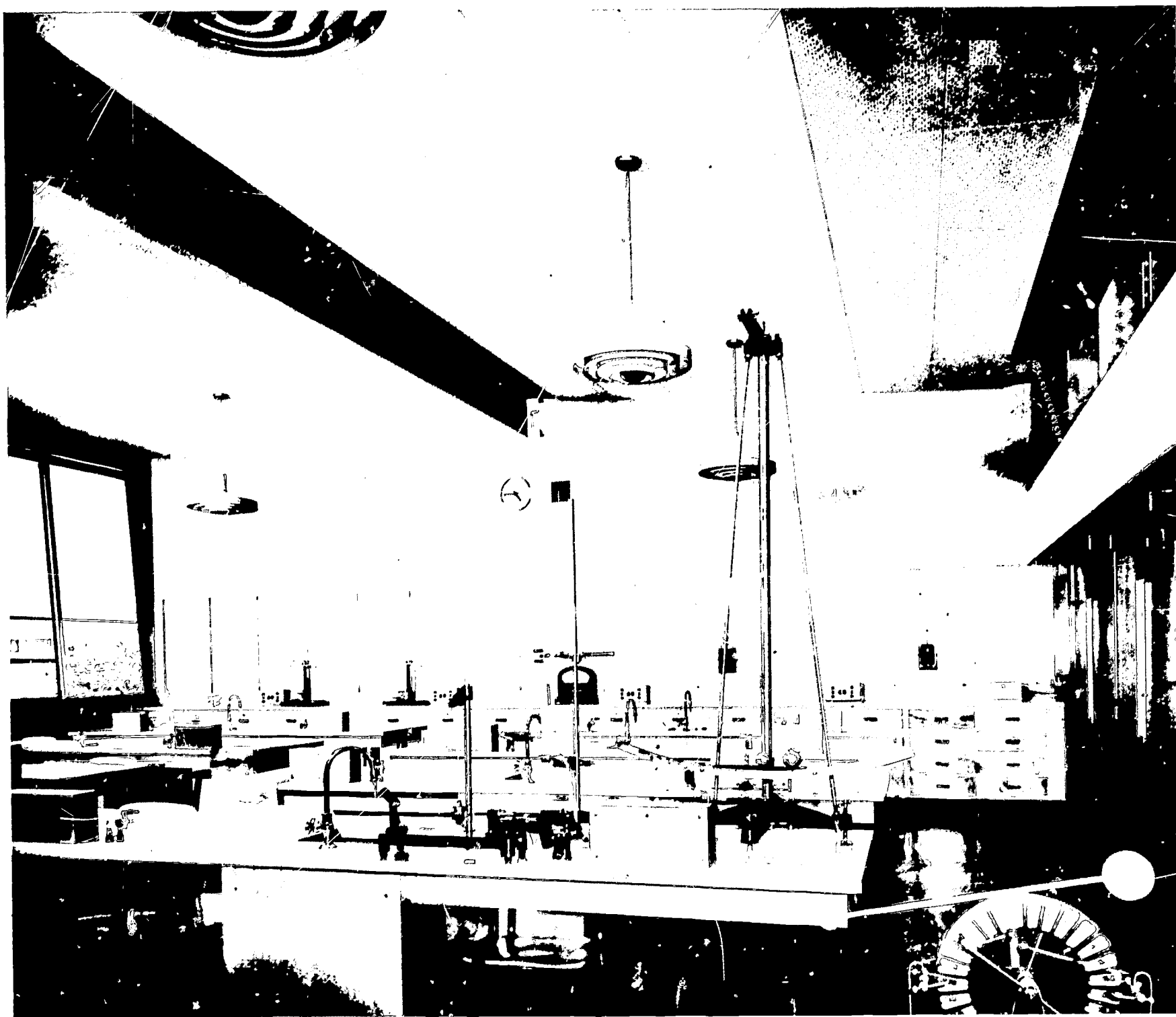
A sink at the end of the table, with a high faucet is used for filling unusually long tubes, and one central sink in the room contains a distilled water outlet and an eye washer. Additional distilled water stations would be convenient, but the block tin pipe required is expensive. Two table ends contain first aid fire blankets. The shower required by some codes was considered unnecessary.

A table height of three feet is standard and satisfactory. Space between tables varies from a crowded four feet to over five feet. Five feet was agreed upon but the instructor wishes it had been seven. Station widths vary from three to six feet; four and a half feet plus the sink width was the linear dimension chosen. Except in the organic lab, an improvement can be made by reducing the utility rack height in the center of the table to about nine inches. This permits a better view of demonstrations and better supervision.

These ideas may be incorporated into various room arrangements. If the class size can be kept small, an ideal plan might distribute clusters of four stations each around the perimeter of the room, leaving the center flexible and free for report writing and lectures. The population pressure in community colleges, however, usually calls for maximum class sizes, often resulting in more concentrated grouping. At Orange Coast College an eight-station table was placed in the center, and two twelve station tables at the outside, leaving space for a portable demonstration table in an ideal viewing location.

Every college visited had at least one hood with a sliding glass door. No instructors recalled ever using the door so it was decided to omit it and extend the hood the full width of the room, enabling the entire class to use it at one time. All air exhaust is brought through the hood, and no air is returned. A three minute air change provides ample ventilation. A greater flow of air produces an undesirable draft. Special hoods for radio-active or other hazardous work will probably see more use even in junior colleges in the future. Since they may be provided as portable equipment, suitable exhaust connections should be installed.

A mistake observed frequently was the instability of balance tables. Many are attached to the building, making them subject to vibration.



Interior view of the physics laboratory, Science Building, Orange Coast College, Costa Mesa, California

Heavy concrete platforms resting on a slab insulated from the building and resting on separate foundations should be used. Table height is frequently too low or too high. Two feet eight inches are best for working from a stool, from which most of this painstaking work should be done. Material selection constitutes a real problem. Steel •

screw-heads, lighting fixture, register, etc. showed signs of rust even in new installations. Stainless steel, coated with pitch or asbestos-cement, may be used for ducts. Asbestos-cement was selected for the hoods and glass blowing tables. Stone table-tops and sinks are expensive but stand up well. A thirty-year old installation the committee checked looked beautiful. It was waxed once a week. Orange Coast College used a more economical patented material in which the dark colors are the least subject to staining. It may be repaired or renovated easily. No flooring is perfect, but vinyl tile may prove best, and can be replaced. Silver nitrate will mark almost any material otherwise satisfactory.

The stock room policy is an important determining factor in planning. The pre-arranged tote-tray containing materials required for a specific experiment will probably gain favor as student volume pressure and intensity of instruction develop. Where only two labs are served, the pigeon-hole wall, with tote-trays sliding through, seems a good idea, but it requires wall space even there. The central store room is needed where several labs are to be served. Seldom is sufficient space allowed for storage and preparation within the area, or for students outside. Decentralized stores are wasteful of material, space, and manpower.

The faculty requested direct access from the preparation-store room to the service entrance, three laboratories, and a lecture-demonstration room. "Seeing-eye" control of two labs from the office and of the balance room from two labs was requested. They also wanted the office to be accessible from two labs and the corridor, and two labs had to have access to a small instrument room. This series of requirements resulted in a cluster plan which provides maximum compactness, but limited flexibility for expansion.

The survey of physics facilities revealed several examples in which maximum flexibility was the objective. Service centers containing all utilities were distributed around the room, permitting a variety of loose table arrangements. Although it is used in such advanced laboratories as that at the U. S. Naval Academy, it should be clearly understood that flexibility is incompatible with sturdy stability required for many experiments. Sockets frequently provided in table tops for inserting rods were also criticised as impractical. Heavy duty clamps on firm, fixed bases are preferred.

At Orange Coast College, eight two-station tables built of two-inch thick maple stock, bolted to the floor were provided. Each bench contains a sink, two gas cocks, and two variable voltage stations. A central panel provides A-C or D-C current in a variety of voltages to any station. It eliminates the mess of wet-cell batteries, but does not provide the precision required for advanced work. Four concrete piers are distributed at table ends for optical work. A room which



can be completely darkened is necessary for demonstrations in optics. Even a "blackout" room without windows failed in one installation observed, because the exhaust ventilator admitted a faint fractional foot-candle. Stability is also provided by a wall of heavy T and G paneling. A concrete wall contains vertical slots and sliding bolts for firm attachment of instruments. A storage-preparation room serves both laboratory and demonstration-lecture room, used by physics and life-science classes.

### LIFE SCIENCE FACILITIES

The survey of biology labs indicated that few tables are designed for microscope work. Tables thirty-seven inches high forced students to stand during the entire period even where adjustable stools were provided. The standard thirty inch height denies comfortable microscope work sitting or standing. Tables twenty-seven inches high were used with success.

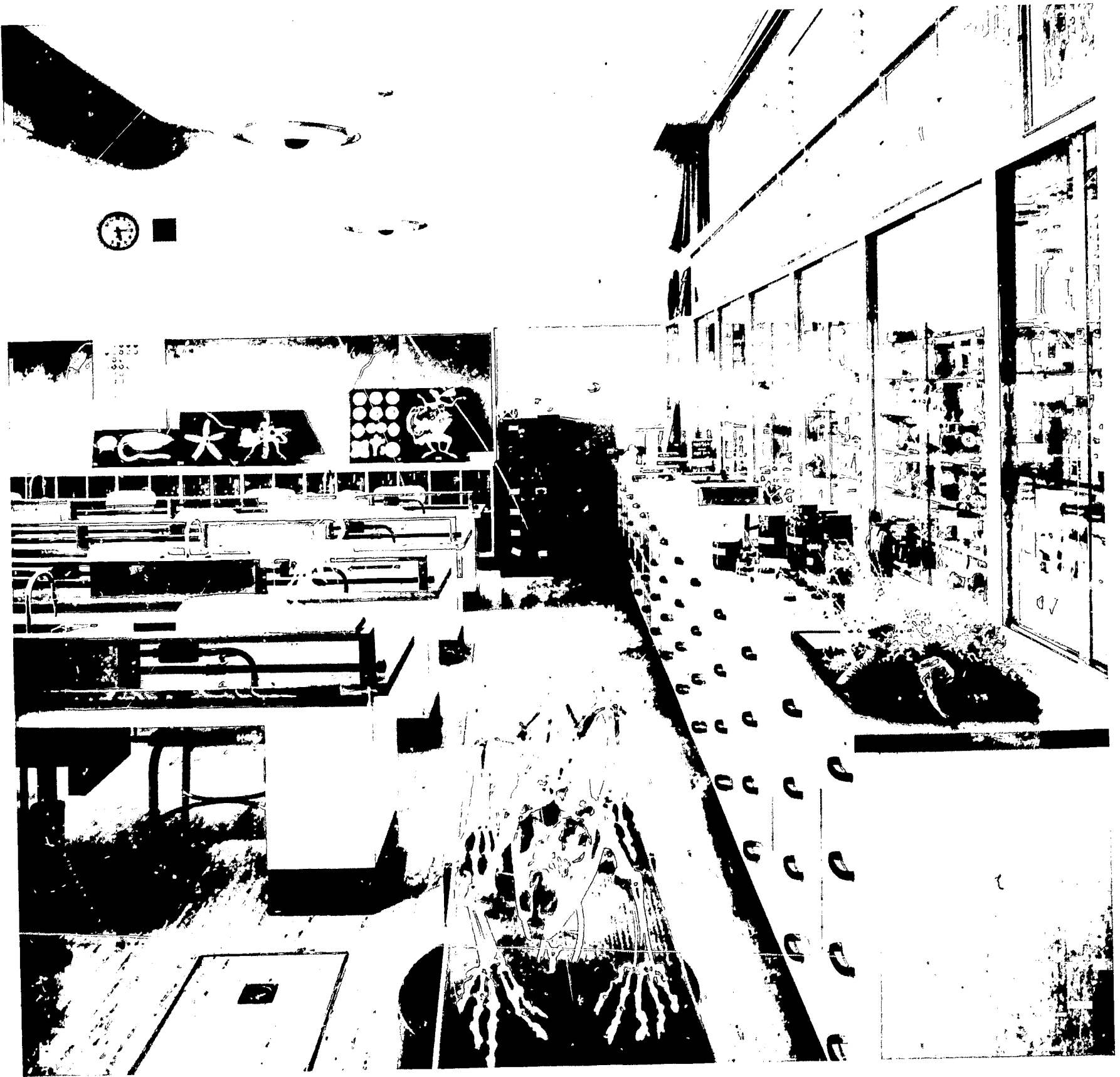
Microscope storage also presented difficulties. When they are stored at the table, to reduce breakage, the student has no knee room and they may be easily lost. They may be stored in a cabinet behind glass doors, or bolted to a spring drawer so they pop out like a "disappearing typewriter."

Four six-station tables are provided in each room. This serves well for lecture and demonstration as well as laboratory work. A sink separates each pair of students and each one has an electric outlet, a gas connection, and a twelve-inch wide drawer. It was found that a dark-colored fiberglass is a satisfactory material for sinks and tops. Methaline blue and other stains are hard even on stainless steel. A hood is provided for lamp-blackening paper. Cats are stored in drums vented to the outside by faculty preference, but a good arrangement observed stored them in plastic sacks on sliding shelves.

Where the budget permits, a museum is an important teaching tool and a community asset. An orderly means of storing, exhibiting, and transporting small material is by mounting it in the bottoms of drawers of standard size. The top row of drawers can then be made visible through a glass counter-top, and drawers may be inter-changed easily and frequently. They may be removed readily for classroom use. Thus a storage room for demonstration material may serve also as a stimulating local natural science museum.

An animal room and a greenhouse separated by a work room are provided at Orange Coast College opposite life science rooms across the corridor. A glass wall on the corridor side makes the aquarium, small animals, and plants visible as a display. Shades permit screening at times when desired. The opposite side borders a garden for

raising live plant material. The entire landscape plan was designed to provide specimens related to the study of botany. A reflecting pool, sectioned for various uses, provides a place for growing water plants and animals. A separate source must be provided for heating and ventilating spaces where live material is stored. Otherwise sudden temperature changes over weekends or even at night may destroy an entire collection.

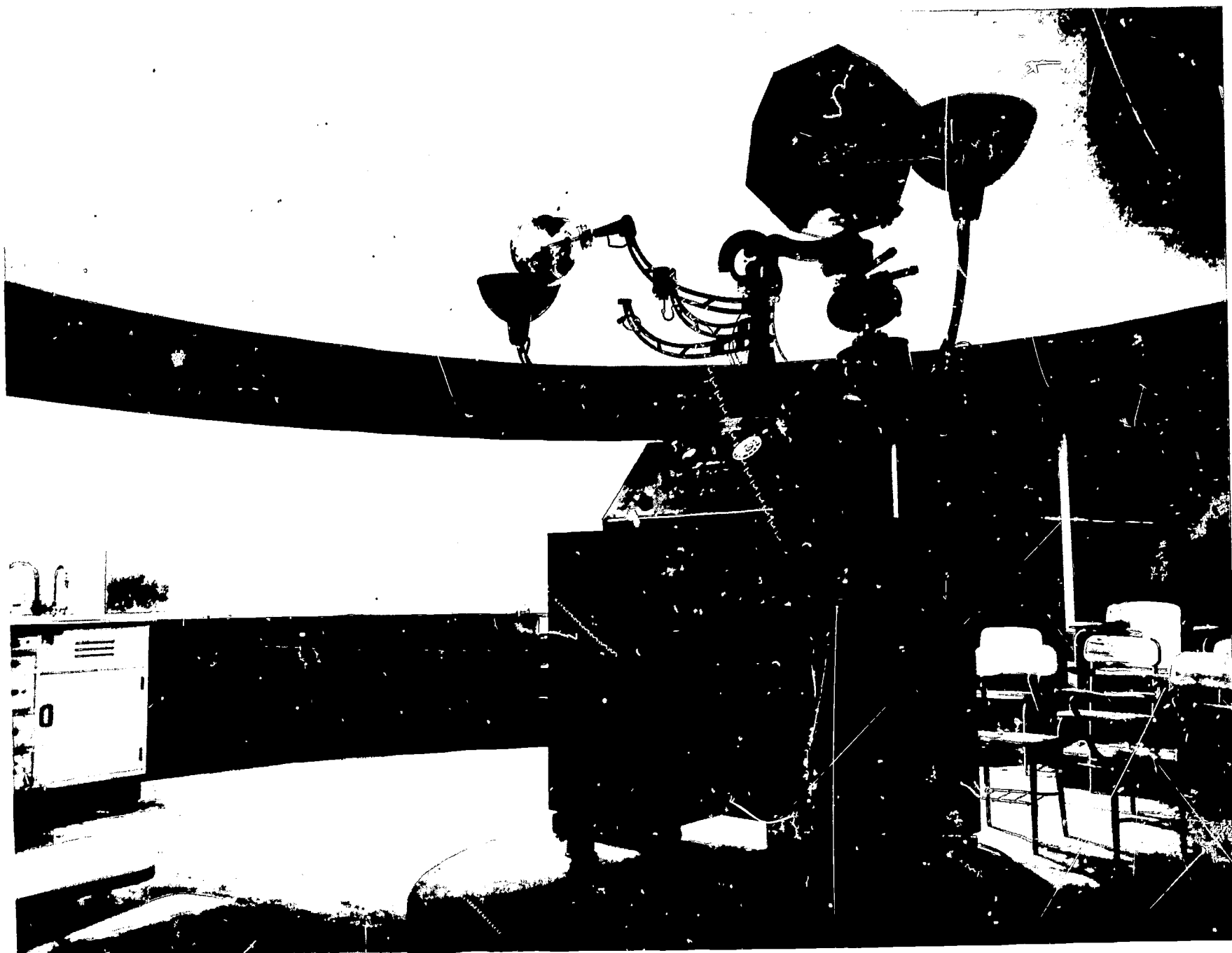


Interior view of the zoology-life science laboratory, Science Building, Orange Coast College, Costa Mesa, California

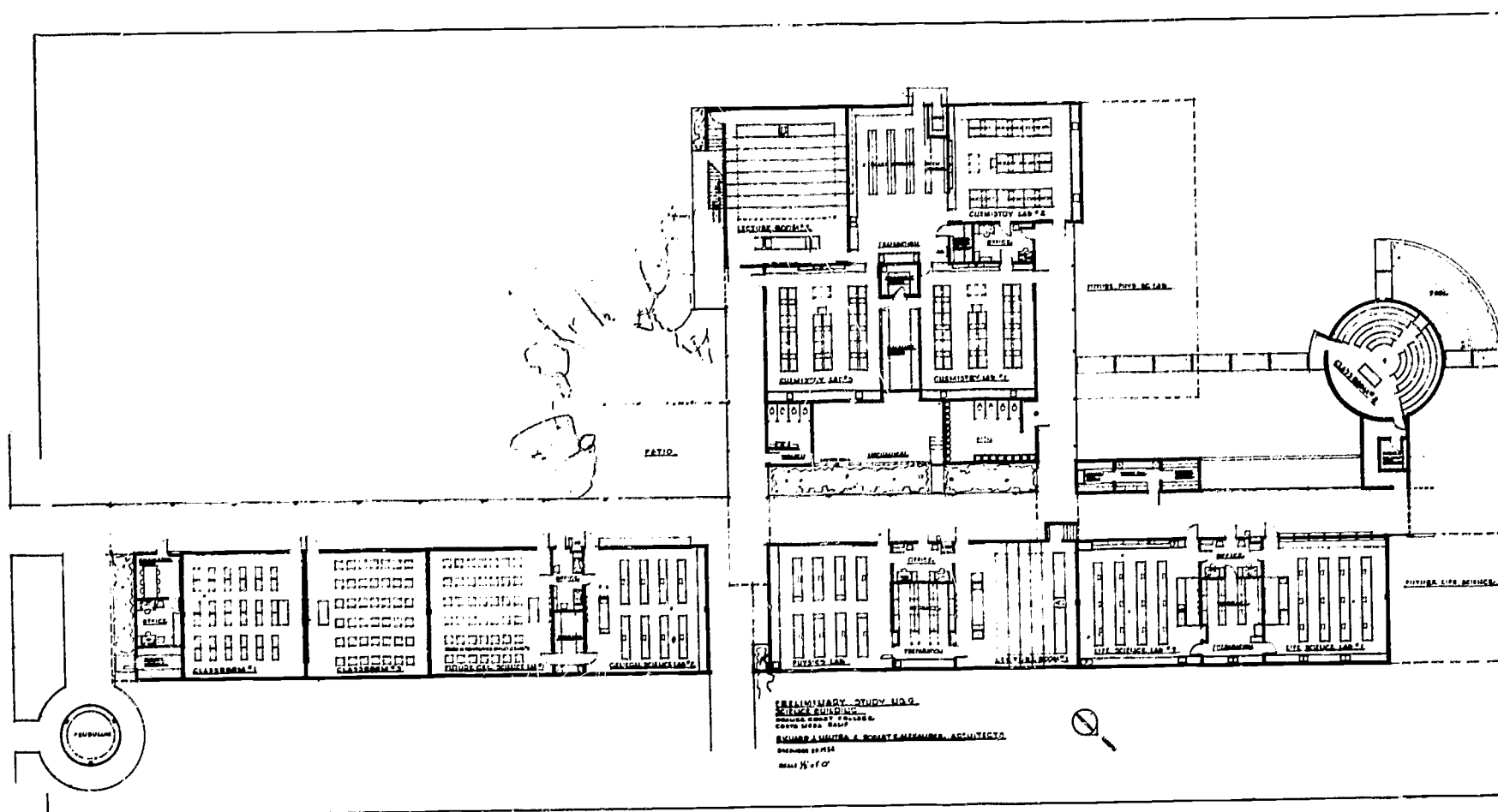
## THE PLANETARIUM

An interesting teaching facility at Orange Coast College is the Planetarium. When built, it was unique in junior college buildings. A projector developed during the war for teaching navigation makes it economically feasible. The proximity of Orange Coast College to Newport Harbor, a small boat center, made it seem unusually appropriate. It was designed fundamentally as a classroom, however, as a day-time teaching aid and as a unique community asset. This combination is not recommended.

Due to the economical design of the pin-hole type projector, the dome was limited to a diameter of twenty-four feet. The floor is extended past the dome to accommodate a full class in tablet arm chairs for general science demonstrations. A chalkboard, cabinet, and sink



Interior view of the planetarium showing chalk board and instruction stand for projector, Orange Coast College, Costa Mesa, California



Floor plan for Science Building, Orange Coast College, Costa Mesa, California

add to its general utility, providing an interesting experiment in classroom form. Storage is provided for the projector and for folding chairs when it is used as a classroom. The acoustical problems in a circular classroom with a full domed ceiling are intense. A telescope mounted on a nearby roof is used in combination with the planetarium for the study of astronomy.

The planetarium dome, illuminated and reflected in the pool, forms a focal point at the entrance to the Campus. The chemistry laboratory cluster forms a nearby appendage to the long strip of life-science, physics and general science labs and the mathematics classrooms facing North-East. Following the policy of the Campus, a small patio provides a place for students to sit outside between classes. A simplified astrolabe, resting on a base sculptured by Peterpaul Ott, graces the entrance to the building, symbolizing science.



# NEW DIMENSIONS

in COORDINATION

4



# COOPERATIVE PLANNING OF EDUCATIONAL SPECIFICATIONS

Highlights of a Panel Discussion

CONRAD BRINER,  
CHESTER ROOT, and  
WILLIAM H. STRAND

Educational specifications include a description of the educational program that an architect can interpret in preparing architectural specifications. The book of educational specifications is a comprehensive listing of the needs of the people who will use the planned facilities, including the students, adults, and the community.

Two things may be realized by educational specifications: (1) educational adequacy, the appropriateness of the facilities for achieving certain types of programs and (2) economy, in the sense of efficient utilization of space.

The book of educational specifications is the climax of an extensive process. This is a process not the process, for in no two situations is the program of developing educational specifications the same. The process used must be dynamic in the sense that it can fluctuate, adapting to the uniqueness of each situation. There are tremendous extremes in processes used to develop educational specifications. Some involve a large number of people and require considerable work. Others, by no means recommended, are prepared in a three-way telephone conversation, with the superintendent, clerk of the board, and the architect making decisions relative to the number and kinds of spaces to be included in a new school. Many mistakes can result from this kind of superficial examination of needs.

Sometimes the involvement of many people in a long drawn-out process of collecting and re-collecting facts adds complexity to the problem. The situation becomes particularly bad when the participants do not understand their role, or the limits of their duties. In many cases citizens groups believe they are making decisions, that they are deciding what a given instructional area should contain in terms of space, equipment, and furniture. When the time comes to equate space and needs to the availability of financing, compromise is needed, promoting a negative reaction on the part of the people who assumed they were

making the decisions. This ill-feeling results from a lack of understanding of the role the committee should play.

The School Planning Laboratory of Stanford University believes that its procedure for drawing up educational specifications has some unique features which make it particularly effective. It has been used successfully by Stanford educational consultants and many school districts.

The realization of educational specifications can justify three objectives. The first is the collection of data and the development of a book of educational specifications. The second is an evaluation of the program to be offered in the facility by having people examine objectives of education and their implementation. A determination must be made of what the school is attempting to do and what is needed to do the job properly. This is decided not only by administrators and teachers, but also by other members of the community. In effect, these people are saying, "This is what we desire. These are the things we think children and adults need in an educational program." As a result, there is an up-grading value in the realization of this process just by virtue of participation.

The third objective that may be realized is improvement of communication with a variety of groups. If the board and administration desire, the development of educational specifications may become a public relations vehicle. The information gathering committees become avenues of communication through which the district can obtain and disseminate information. This, in turn, assists the district to realize community support for bond and tax elections.

#### GROUP EFFORT IS EFFECTIVE

Many groups may supply valuable data which may be used in compiling the best information possible to plan facilities. There is immense value in having boards of education sit down with administrators, teachers, citizens, architects, and consultants to determine the kind of school program they want for today and for the future.

Most persons will agree that the best plans come out of a composite of viewpoints. Generally, the board of education initiates the development of the educational specifications and delegates authority to the administrative staff. The role consultants play depends on whether they are from within or outside the district. The administration becomes the guide to the process, coordinating meetings, releasing teachers from classroom duties to participate, providing meeting places for citizens, and, in general, facilitating the study.

In defining the role of groups, it is important to stress that all are

contributing to a pooling of knowledge, from which legally constituted agencies will derive the information they need to make their decisions. The involvement of citizens can take many forms. Some districts prefer not to have citizen participation at all. Others are anxious to obtain the involvement of people for public relations purposes. The philosophy of the board and administration will influence how groups are selected and the roles they will play. There are, of course, definite advantages in obtaining the ideas of the people who will be responsible for approving construction when the time comes for bond elections. Community members are interested and they can become valuable participants in this fact finding process.

The architect serves a significant function in this process by contributing to, and continuously evaluating, the educational specifications during their preparation. During this period, he develops an appreciation for the desires of people, for the kind of problems they are facing, and the kinds of compromises that are necessary in order to fit the plan to a budget. Although the climax of this process is the book of educational specifications, it is from here that the architect must move to start his drawings and his site utilization plans.

#### GUIDE LINES FOR COOPERATION

The use of community committees for the development of educational specifications is a delicate matter which needs to be carefully considered. Dr. William Odell, from his experiences as superintendent of schools and as professor of education, has compiled a list of principles for the proper use of committees. The first principle is that the topic or the problem which the committee will consider, should be important in the minds of the person creating the committee and those who will serve as its members. The latter may develop an appreciation for the value of the work of the committee as they undertake their assigned tasks. However, if the person who creates a committee has a minimized idea of the importance of the topic and of the committee, he will encounter serious difficulties. If he is not convinced of the importance of the committee, he should not bother with the committee.

Secondly, there should be an understanding by all concerned of the scope of the problem which is to be studied and the responsibility of the committee in regard to this problem. Is this an advisory committee? Does it have decision making powers? Should it review one section of the curriculum or the entire educational program?

Third, after the scope of the committee's operation has been defined, every possible resource should be provided to assist the group perform its assigned task. The committee should be supplied the tools to do the job.



The fourth consideration is that while the committee works there should be constant and consistent communication between those who set the committee in motion and the committee itself. The creators do not want to activate a committee and six months later wonder how in the world they got their ideas.

Fifth, the committee should have status during its deliberations and be given a dignified opportunity to present its final report. In public relations, involvement is a prime consideration, but it is also important to give recognition to the participants for their accomplishments.

The final rule is that the committee should be discharged when its work is completed. Although it is not always easy, the committee organizers should make clear from the beginning the job the committee has to do; after this task has been finished, it stops work. If the committee has made recommendations, something should be done with them. They should be put into effect if possible; if not, the committee should be told why all or part of its findings are not usable.

#### THE ROLE OF THE CONSULTANT

The architect must know the educational programs which will be conducted in the facility being planned. Often it is difficult for a client, especially a school district, to produce a definitive statement of their program. School districts are not constituted in a manner which facilitates stating the program in a form that the architect can understand and utilize in creating the desired project.

Some architects are skeptical of any group of consultants or experts coming between them and their client. These architects typically are individualists who like to have direct personal contact with their client. Today, for every one that is in that category, there are probably one thousand who work as members of a team. They are accustomed to working with their own consultants, the many people in their offices, and their supplies in producing specifications or master plans. Basically, the process is a device for accumulating information of a highly reliable sort. The complexity of school construction projects requires many hours in ferreting out needed information.

The educational consultant fills a tremendous need in this cooperative effort. He is a mediator, the translator of the needs and desires of the school district in terms understood by the architect. The architect can follow the resultant program; he can work imaginatively after receiving a complete statement of the needs of the district. Educational specifications are necessary because the architect is not always equipped to ask the faculty or school board the questions which

will provide the required information. A particular advantage is that the compiled data is not colored by individual personalities. Architects utilize the very broad body of experience of educational consultants, who, serving as intermediaries, correlate the many facets of the problem and state them so they are understandable to the architect.

It could be said that this modus operandi might handicap an architect, limiting his conception of how the building should be put together. The consensus is that this is not so. The educational specifications do not state how the job should be done. They list the relationships rather than specific needs of particular areas. The best results may be obtained if the functions are outlined to the architect, allowing him considerable freedom in the manner in which the structure is created. The specifications, then, should convey to the architect the relationships of the many parts of the school; what kind of personnel are to be involved in particular administrative offices; what their functions are; how they relate to others in that particular structure; and how one department relates to other departments in the school.

Meetings with the faculty, the citizens, and the administrators of the school district enable the architect to obtain a fairly good picture of the school and community. Architects find this essential in creating structures which will fit the particular needs of the school district.

-----

## EFFECTIVE USE OF CITIZENS COMMITTEES

ROBERT W. SMITH

There are two different types of citizens committees. One of these arises outside of the jurisdiction of the board and the administration of the school district. The other type is created under the sanction of the governing board of the school district. The latter will be considered herein.

District-formed citizens committee may be of two types. One is a rather small nucleus committee whose major role is to serve as

a sounding board. The school authorities will try to inform the committee members what the role of the junior college is and what the problems of this type of institution are. The hope is that these people can be educated and that, being a cross-section of the community, in a second step they could be "fanned out", resulting in a vote-canvassing committee of two hundred or three hundred persons.

Another value of the small nucleus committee is that its members probably have greater contact with the public than any person directly connected with the public enterprise. Consequently, they may sometimes serve as a weather vane; an intelligent citizens committee may sometimes "smoke out some things" and keep the board and school administration alerted concerning problems which may affect the school.

The citizens committee must be wanted by the board, by the administration, and by other people that are professionally involved. It is a very embarrassing situation to have a citizens committee appointed and then find that one is not really wanted -- but that the school authorities felt they had to have one. This situation does not make a good lasting impression.

The members of the committee should be selected by the board and the administrators of the district. In this selection they should try to secure a cross-section of the interests of the community such as lawyers, doctors, labor leaders, government leaders, and housewives.

The committee must be given a definite job to do. This cannot be emphasized enough -- and it seems to be one of the most difficult tasks faced by most boards and administrators. They seem reluctant to delineate exactly what they want the members of the citizens committee to do.

There should be definite recognition of the limitations of the group of laymen. The members of this committee are not professional educators, professional architects, professional finance people, or real estate men. Consequently, they can only give a "community backing" type of response.

#### LEADERSHIP

An important consideration is the selection of the leader of this committee. He must be one in whom the school officials have confidence. This leader will find that many pressures are placed upon him. He will have to work with strangers. He may have "crusaders" on the committee. Crusaders in themselves are not bad; however, a committee of this type seeks a norm, a common view-

point. If those who are not representative of this norm are placed in positions of primary responsibility the committee will experience structural difficulties from the outset. The leader of the committee will experience some very interesting problems in trying to get all the people working together -- and actually coming out with some results.

### SIZE

Size must be a consideration in forming the most effective committee. A group of thirty people has generally proven to be a manageable number of members. All organizers want to get as many persons as possible on a committee. However, if many more than thirty are included, the committee can become unmanageable to the point where nothing is accomplished.

### STRUCTURE AND PURPOSE

Immediately upon formation, the committee should be divided into sub-committees to handle the particular parts of whatever the general committee has been assigned. The administration and the governing board of the school district necessarily must "put their heads together" and determine what the committee should do, and then divide this into natural subdivisions. The administration should outline what they hope will be included in the final report to the board before the task is given to the committee. This does not mean that the conclusions are outlined in advance, but the form indicates the emphasis in terms of a breakdown of problems or questions to be considered. For example, if the committee was considering the general program of a school district the outline should deal with such questions as: What is the general program? What is the number of children to be expected in the school? What type of curricular emphasis is to be given? What general quality of work standards are sought?

Citizens committees are sometimes utilized in site situations. These committees can cause the school district much grief if they assume it is the responsibility of the committee to select a particular site. Instead, they should survey the available sites, get an idea of real estate values and consider other public planning and programs that might adversely affect the district.

A committee of this type should establish a definite time schedule. This schedule should designate when the final report is due. This is best done by getting each sub-committee to prepare a report and adding to this some general conclusions. This then becomes the general committee report.

Control over publicity is very important. Often, in a citizens group,



someone divulges information to the press before there has been complete agreement within the committee. It should be clearly set forth at the outset that any publicity to be released on the proceedings of the citizens committee must be released by the board. At the same time the press should be invited to attend all of the meetings and be given all the pertinent data. They may write anything they wish, but the terms of the final recommendations or suggestions should be released through the board or school administrators.

The final point to be emphasized is probably one of the most important. A task should never be given to a citizens committee unless it is desired that its members should really work on it. There are too many demands upon people to justify placing them in the position of being "signers of a blank check." However, if the leaders of a school district desire the enthusiastic support of the members of the committee, they should assign them an important task to perform. The committee members will respond by contributing the maximum effort and, generally, will not exceed the boundaries of their authority.

-----

## THE ROLE OF THE ARCHITECT

W. GLENN BALCH

Collegiate planning may be a community enterprise, where the community has the opportunity to participate and opinions of the lay public can be gathered and evaluated. This community effort often results in the formation of a citizens advisory group to work with the school board and superintendent in site selection and financing. At this stage the assistance of the school planning office of the State Department of Education is of utmost importance. An educational consultant would probably be called in to make an over-all survey of growth trends and to advise on site locations and space requirements. Usually it is assumed that this is all the talent needed to solve the problems.

Sometimes the citizens advisory group attempts to go far beyond its ability in making definite recommendations. This occurs parti-

cularly when a definite scope of activity has not been outlined. These recommendations may be made in all sincerity but the need for expert technical counsel has not been realized, and in most cases there has been a lack of understanding that such help is available.

#### PURPOSES AND FUNCTION

All of this leads to what may be said about architects and how they can function, from the beginning, as part of this community enterprise. Clearly, the architect is not an educational planner or a consultant on educational matters. He should, however, participate in the planning at the earliest possible time. To properly do his job, the architect needs to "feel" the thinking of the educational staff and the community. Design means total planning, not just the embellishments which appear on the surface. A very important part of total planning is the careful consideration of all the wants and the likes and dislikes of all the persons and groups in connection with this enterprise.

The junior college plant must be planned through the cooperative efforts of administrative officials, staff, state officials, architects, the governing board, and citizens of the community. The experienced school architect is not a drafting service. To call him in and hand him an educational specification calling for so many buildings and so many rooms with an order to produce the plans is a sure way of short changing everyone concerned. By virtue of his experience, he can offer much in the earliest stage in planning. If the architect is given the opportunity to attend conferences of the educational staff and citizens committees, he will be much better equipped to perform his task.

#### EXAMPLE: SITE STUDY AND SELECTION

It is not the architect's job to determine whether the site shall be near a business area, adjacent to the busiest highway, or on top of the highest hill. This is a decision which must be made by the governing board on the advice of the administrative staff, the state school planning office, the educational consultant, and the citizens. The architect can give advice on the physical conditions of sites under consideration, which may materially affect the final decision.

Often the problem of drainage for storm water is a serious consideration. The bearing capacity of the soil is another. The amount of earth cut and fill necessary to make the site usable should be investigated. On one junior college project there arose the problem of a natural water course which drained water from land adjacent to the site. If this had been allowed to follow its natural channel, which drained to other property, there would have been no problem. However, it was necessary to convert this channel to an underground

pipe and concentrate the out-flow at the state highway bordering the site. The state highway had a drainage channel which would take care of the estimated flow of storm water, but the property owners across the highway feared flooding of their property and officially recorded that they would sue the school district in case of flooding. Future planned improvement of the highway will eliminate the danger, but in the meantime the school district has a hazardous condition to face. A better solution might have resulted if the problem had been ascertained before the property was purchased.

Traffic conditions must be studied. If the site is bordered by heavily traveled streets or highways, problems of ingress and egress are present. The need for adequate parking space is another important factor which must be considered.

All of these considerations are part of the architect's job, being within the area of his experience and training. Often his counsel and advice can result in money savings to the district, or, at least in the avoidance of costly outlays to correct unusual conditions.

#### **SPECIALISTS PROVIDE IMPORTANT SERVICES**

Because of the complexity of the architect's job today, he must surround himself with many specialists. Modern construction techniques, intricate heating and ventilating systems, air conditioning, and electrical systems have placed the architect in the role of coordinator of the services of a great number of experts.

In site selection the quality of the soil can become an important cost factor. If questionable soil is present, the architect may recommend the employment of a soils engineer. His findings might indicate a low bearing capacity soil requiring extensive foundation work at a great cost. On the other hand his study might show that sub-surface conditions are good and no excess cost need be expected.

The contour of the ground may have an important bearing on physical planning as well as cost. The architect may feel it necessary to bring his civil engineer into early discussions. Almost any site can be made usable if enough money is spent on it. But what district can find money to move a mountain or fill a crater? An extremely hilly site may be more desirable because of location, but its development may be prohibitive in cost.

Other site conditions could involve the architect's mechanical and electrical engineers. In one case, the site was outside the city limits where no public sewer lines were available. The city would serve the college, providing that the district would pay for several thousand feet of sewer line from the city's nearest connection to

the college site. This problem was not faced in considering the site, necessitating later studies to analyze these costs and compare them with those required to construct a disposal system on the site. It is also desirable to make an early study of the electrical distribution system, consulting the local utility company in order to anticipate costs.

Legal advice is often necessary. Although this cannot be a part of the architect's service, he can frequently assist an attorney. There may possibly be easements across the property which must be considered in developing the site. Legal assistance may be necessary to attempt to have the easements vacated or re-routed. Land appraisers may also be necessary. In some cases architects have been able to assist appraisers in developing their reports, particularly if condemnation has been involved.

#### EFFECTIVE UTILIZATION OF ARCHITECTURAL SERVICES

Too frequently it is assumed that the architect should be brought into the picture only when he can be authorized to commence drawing the plans. This may be because of a desire to economize. Generally, if the architect is called in at the earliest stage, it will all be a part of his service for the design of the project. Only if he is asked to do special work, outside the scope of his usual service, would there be extra cost. On the other hand, if the district does not want to enter into an agreement for the complete project, architects are also available as consultants.

Within the architectural profession are some outstanding people whose principal activity is in school work. There is a competitive spirit, not in terms of trying to get the most business, but in terms of trying to do the best job. Total planning as indicated before, involves the school administration, the governing board, the teaching staff, the state school planning office, the educational consultant, the citizens, and the architect. With proper recognition of his place in the over-all scheme, and his participation from the beginning, the competent architect is able to interpret the needs, put them on paper, and see that what finally stands on the ground is the fulfillment of the desires of all concerned.

-----



# CONTRIBUTING PARTICIPANTS

## PART I NEW DIMENSIONS IN PURPOSE

• **A. JOHN BARTKY**, Professor of Education, Stanford University • **EDMUND J. GLEAZER, JR.**, Executive Director, American Association of Junior Colleges, • **FRANK B. LINDSAY**, Chief, Bureau of Secondary Education, California State Department of Education • **JAMES D. MAC CONNELL**, Professor of Education and Director, School Planning Laboratory, Stanford University • **LELAND L. MEDSKER**, Vice Chairman, Center for the Study of Higher Education, University of California, Berkeley •

## PART II NEW DIMENSIONS IN PLANNING

• **LOWELL F. BARKER**, President, Antelope Valley College, Lancaster • **CHARLES BURSCH**, Educational Consultant, Sacramento • **J. HART CLINTON**, Publisher, San Mateo Times, San Mateo • **FREDERIC T. GILES**, President, Everett Junior College, Everett, Washington • **H. L. GOGERTY**, Architect, H. L. Gogerty Associates, Los Angeles • **ROY A. KNAPP**, Superintendent, Antelope Valley Joint Union High School District, Lancaster • **S. V. MARTORANA**, Chief, State and Regional Organization, Division of Higher Education, U.S. Office of Education • **THERON L. McCUEN**, Superintendent, Kern County Union High School and Junior College District, Bakersfield • **D. GRANT MORRISON**, Specialist for Community-Junior Colleges, Division of Higher Education, U.S. Office of Education • **WILLIAM R. ODELL**, Professor of Education, Stanford University • **JAMES L. WATTENBARGER**, Director, Division of Community Junior Colleges, Florida State Department of Education •

## PART III NEW DIMENSIONS IN APPLICATION

• **ROBERT E. ALEXANDER**, Architect, Neutra and Alexander Associates, Los Angeles • **R. DUDLEY BOYCE**, Placement Director, Stanford University • **DANIEL BUSHNELL**, Architect, Warnecke and Warnecke, Inc., San Francisco • **MARIO CIAMPI**, Architect, San Francisco • **FRED S. COOK**, Assistant Professor of Education, Stanford University • **JACK DANIELS**, Chairman, Division of Fine Arts, College of San Mateo, San Mateo • **ROSS DENNISTON**, Campbell Union High School District, Campbell • **JOHN T. DURAND**, Administrative Assistant, United Airlines, San Francisco • **JAMES FESSENDEN**, Architect, Ernest J. Kump and Associates, Palo Alto • **CALVIN G. FLINT**, President, Foothill College, Mountain View • **FREDERICK C. HUBER**, President, Monterey Peninsula College, Monterey • **PAUL DeH. HURD**, Associate Professor of Education, Stanford University • **R. L. IGLEHART**, Shell Development Company, Emeryville • **WILLIAM F. KIMES**, Assistant Superintendent, Orange Coast College, Costa Mesa • **ROBERT LINDSEY**, East Contra Costa Junior College, Concord • **L. E. MILLER**, California Research Corporation, Richmond • **RAYMOND C. SCHNEIDER**, Research Associate, School Planning Laboratory, Stanford University • **STANLEY SMITH**, Architect, Ernest J. Kump and Associates, Palo Alto • **JOHN C. WARNECKE**, Architect, Warnecke and Warnecke, Inc., San Francisco • **GEORGIA WILLIAMS**, Instructor, Women's Physical Education, Stanford University •

## PART IV NEW DIMENSIONS IN COORDINATION

• **W. GLENN BALCH**, Architect, Balch, Bryan, Perkins, and Hutchason, Los Angeles • **CONRAD BRINER**, Research Associate, School Planning Laboratory, Stanford University • **CHESTER ROOT**, Architect, Higgins and Root, San Jose • **ROBERT W. SMITH**, Stanford Research Institute, Palo Alto • **WILLIAM H. STRAND**, Lecturer in Education, Stanford University •

## PHOTO CREDITS

\*ROBERT A. GREEN, Architect, Tarrytown, New York - page 3 & 71; \*CAUDILL, ROWLETT, AND SCOTT, Architects, Oklahoma City, Oklahoma - page 6; \*deYOUNG, MOSCOWITZ, AND ROSENBERG, Architects, New York, New York - page 7; \*DUANE LYMAN AND ASSOCIATES, Architects, Buffalo, New York - page 12; \*NEUTRA AND ALEXANDER, Architects, Los Angeles, California - pages 16, 92, 95, 96, & 97; \*WRIGHT, METCALF, AND PARSONS, Architects, Bakersfield, California - pages 17, 43, 67 & 78; \*BAROVETTO AND THOMAS, Architects, Sacramento, California - page 19 & 77; \*JAMES L. WATTENBARGER, Florida State Department of Education - pages 26, 27, 29, 30, & 31; \*WARNECKE AND WARNECKE, Architects, San Francisco, California - pages 36 & 37; \*HAROLD W. HALL, Architect, Everett, Washington - pages 46, 50 & 53; \*H. L. GOGERTY AND ASSOCIATES, Architects, Los Angeles, California - page 63; \*ROBERT E. ALEXANDER, Architect, Los Angeles, California - pages 68 & 83; \*ROBERT RICK, Architect, Victoria, Texas - page 89.

All materials in this publication may be reproduced or reprinted without consulting the editors.

## ACKNOWLEDGEMENTS

The editors wish to acknowledge the assistance of the following firms in the preparation of original materials for use in this publication:

AMPEX CORPORATION, Redwood City, California  
Tape-recording System

PHOTO AND SOUND, San Francisco, California  
Recording Tapes

## THE AMERICAN SCHOOL BOARD JOURNAL

"Planning Community Junior Colleges" by Frederic T. Giles, S. V. Martorana, and D. Grant Morrison, as it appeared in the January, 1958, issue of The American School Board Journal.